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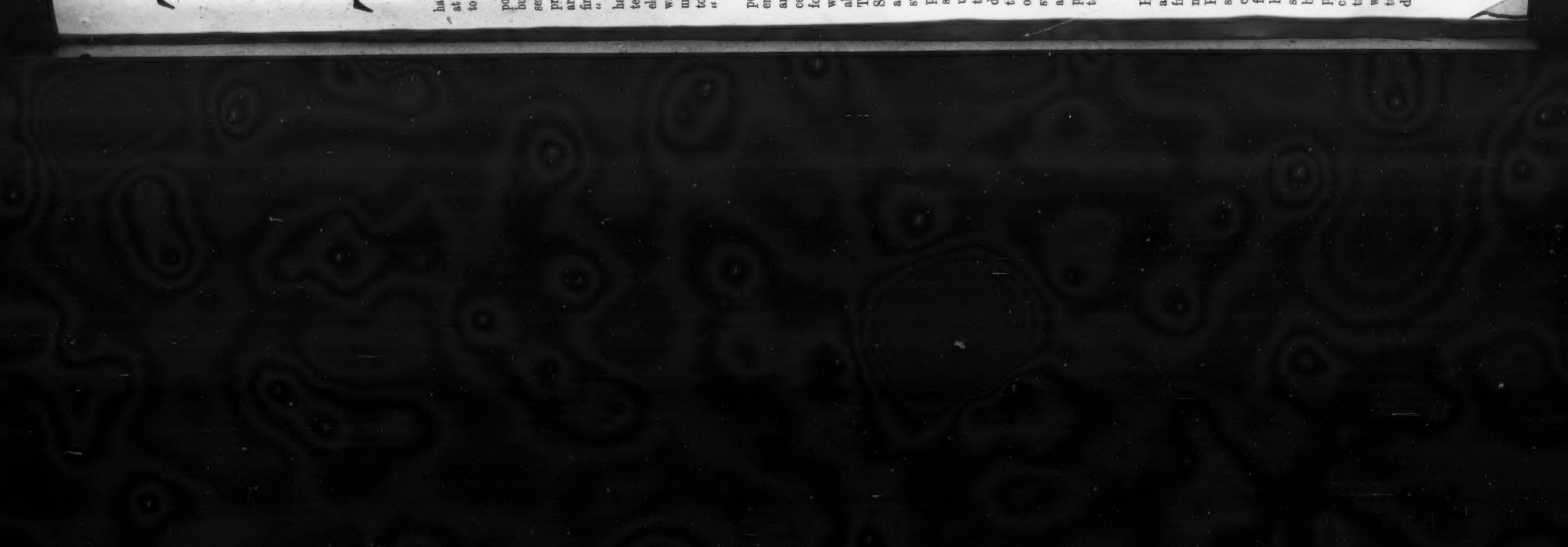


THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXV.—No. 3950 OCTOBER 18, 1918.

THE INSPIRATIONS OF OUR FATHERS.

THE English architect of the latter half of the nineteenth century, forsaking the guides of his youth, sought inspiration under the guidance of diverse influences. To be academic or classical in those days was simply to be inartistic, tradition having lost all sanctity with the interruption of continuous art at the Renaissance, and he wandered with enfranchised spirit to and fro in search of beauty.

The strange revulsion of taste which accepted on principle pointed arches to semicircular, battlements to cornices, and buttresses to pilasters, had exhausted both its logic and sentiment without reaching any essentially artistic basis or principle, for it was prejudice against the current method in architecture rather than a wider outlook which stirred the fires of the battle of the styles. But the "pointed" churches, "Early" and "Middle," of the era of the Oxford Movement had clothed themselves in a garment of sham romanticism in texture as well as in shape. With the return of this important element of texture to our architectural art, stucco for a while was banished; the ragged garment for the time became the uniform of artistic building; it has not even yet been relegated to the extensive limbo of discarded architectural fashions, for "rough cast" has a vogue of assumed innocence.

The Kentish Rag age was succeeded by a cult of external polychromy of materials; variegated bricks and stones were employed with a furtive use of faience to provide at once colour and texture; breadth of effect was a prescription not yet conceived, and vigour and picturesque force ruled design both in form and surface. The success of the new phase of romanticism was, however, disputed. William Butterfield's works were always enigmatical, though always maintaining their interest. The influence of his example was great, for a while, upon G. E. Street and S. S. Teulon. This may be seen in such buildings as their respective churches of St. James-the-Less, Garden-street, Westminster, and St. Stephens on Hampstead-hill. But polychrome brick and stone buildings in London scarcely sustain their primitive glory, and we look with a pitying wonder upon the courage of the architects and the submissiveness of their clients. A wide but not inaccurate generalisation may describe the aspect of all subsequent architecture as being in the key of red brick. At first the element of colour rather than of material texture asserted itself so strongly that Red Mansfield stone came into demand and itself marks a fleeting epoch. We are still under this lurid influence to an extent that almost precludes other materials of innocent colours from any claim to artistic effect.

Yellow Brickwork.

Lord Leicester, the ancestor of Coke of Norfolk, built Holkham Hall of a costly yellow brick carefully matched to an antique Roman example; he had thought of importing bricks from Italy, but found to his relief that his Norfolk agent could make fine washed yellow bricks on the estate. Bath House, Piccadilly, and Brooks' Club are London instances of the value set upon a finely rubbed yellow brick for classic buildings a century ago. Later on, Sir Gilbert Scott used malm facings for the rear elevations of the Broad Sanctuary building, which have smoked and weathered, not unpicturesquely, with their stone dressings. The country-side abounds, however, with buildings of all classes, belonging to the piping times of the peace after the last great European war, that illustrate many charming uses of simple yellow brickwork: walls plainly treated with arched recesses, ample windows, plain eaves in which neither rustics or pilasters are employed, and any architectural performance is concentrated upon a stone or stucco doorway of Italian or Grecian pattern. The colour tone of the walls so quietly combines with the white stone doorway and grey slating that we are bound to confess the harsher contrast of a strong red brick could only be demanded in an age less sensible to the charge of vulgar show. But yellow brick yet remains under a stigma, and an enlightened architect dare not submit to any general committee a proposal for its use without risking his up-to-date artistic reputation.

An increasing consciousness of repugnance to the smoky aspect of our great cities, and of the practical ineffectiveness of all attempts to reduce this obstinate, though preventible, disease of civilisation, has without doubt strengthened our love of warmth of colour in clothing all classes of building. Portland stone is prescribed with regret as necessary for monumental works, and glazed bricks or terra-cotta, if not periodically washed, wear their grimy facings more unpleasantly than walls of red brickwork. Change in the public regard for calmer colour waits upon smoke abatement, and until this is attained the general use of red brick that supervened upon the school of polychromatic design will probably be retained.

It is not difficult in tracing the swift revolutions of taste in modern times to discern the influence of some dominating personality in each period of change. The rapid publicity of designs has involved the popularity and influence of their author in architecture as much as literature. Pugin, and in a large measure Gilbert Scott, by his moving reports to cathedral bodies, wielded the pen with as much effect as the pencil; and Street proved himself as doughty in controversy as in architectural competition. Butterfield, however, exercised his potent and contentious influence only through his buildings, though he, in early days, had an effective champion in Mr. Beresford Hope.

Norman Shaw and his influence.

The effect of Norman Shaw upon the work of his day was more directly powerful and indirectly widespread than that of any contemporary, and this was exercised solely through his buildings. The rapidity and extent of Norman Shaw's influence are due largely to the architectural Press, but, though a charmingly voluminous correspondent, he did not embark upon the public exposition of architectural doctrine except on the rarest occasions. Within the walls of the Royal Academy for over a quarter of a century his influence on all matters cognate to his profession was supreme, but he never addressed its students or the public in its lecture room. The secret of his great public reputation as an architectural leader lay entirely in the infectiousness of the examples of his art. Architects followed with zest a leader whose pace they could not equal, and whose next ideal it was impossible to forecast. It is fruitless to explore ancient England or Holland for the prototypes of Shaw's designs, for he gleaned widely, more so than any contemporary, and Europe would be searched in vain for the precedent of such a design as the building at the corner of St. James's-street and Pall Mall, a combination of power and refinement in detail, fresh and original and permanent and dignified in impression. The value of the red envelope was now apparent, and without further propaganda red brick became an essential of modern architecture. Cut and rubbed brickwork is in itself a charming material, having its peculiar successes as well as difficulties, and though it has now almost ceased to be popular, red walls remain with a return to stonework for rustics and pilasters. The hue of the fringe of any residential district is invariable; the new Georgian era is as plainly flushed with carmine as that of the Regent was with golden yellow.

We are now, perhaps, in the pink haze of artistic sunset—it can scarcely be of dawn. We will rest our eyes for a while and awake to realise that superficial qualities are valuable in architecture only as they reflect essential facts.

NOTES.

The Coming Session of the R.I.B.A.

THE programme for the forthcoming session of the R.I.B.A. is not yet quite settled, but the list of papers to be given promises well. The session opens with the address by the President, Mr. H. T. Hare, on November 4. The first paper will be by Mr. Wm. Dunn, on "The Chepstow Housing Scheme," for which Messrs. Dunn & Curtis Green are the architects, and should prove of much interest.

Professional Association.

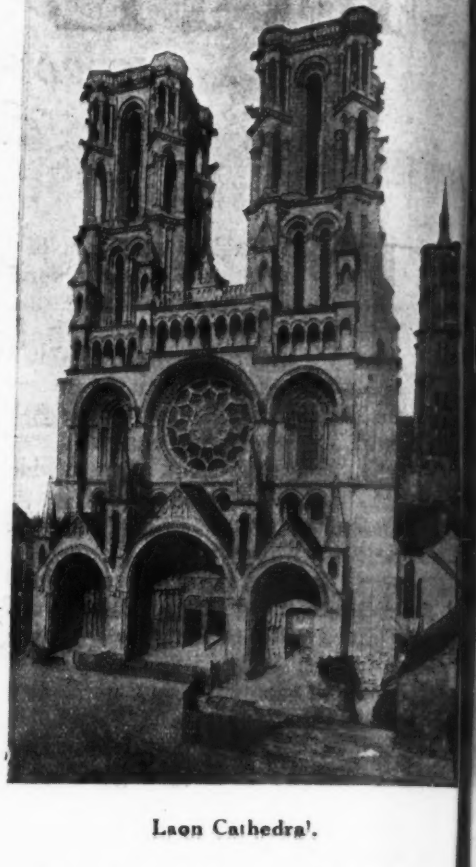
WE are of opinion that the lack of unity and sympathy between members of the profession is responsible for much of the lassitude which prevails in architectural circles. Architects ought to meet each other more frequently and under comparatively informal conditions; they should learn to take a more sympathetic interest in each other's work and show more active interest in the general good of the profession. We should have thought that the Institute might do far more to bring architects together by promoting more opportunities for friendly intercourse, and, in short, by making the Institute a little more of a club. For instance, why cannot the President's "At Homes" be continued with some special subjects of interest to claim attention? There are, surely, no insuperable difficulties in having "ladies' nights," when we might punctuate the architect's humanities. There are great and serious times ahead, great with possibilities for good, and serious as to the reconstruction of life and affairs.

Contracts for Post-War Housing Schemes.

A FEW months ago the Association of Municipal Corporations wrote to the Ministry of Reconstruction, forwarding a resolution requesting the Government to accumulate stores of raw materials required in connection with housing schemes, and to sell to local authorities at cost price. This letter has been laid before the Building Materials Supply Committee, who are not able, under present conditions, to recommend the course proposed. The Committee, however, are of opinion that it would be desirable that local authorities should forthwith enter into contracts with the manufacturers of bricks, &c., for supplies for post-war delivery at an agreed price to represent cost of production and a reasonable profit. This would, in the opinion of the Committee, have the effect not only of placing local authorities in a position to build at as early a date as possible, but also of stimulating production, since manufacturers are, in the absence of a market, not anxious to accumulate stocks. The course recommended by the Building Materials Supply Committee appears to have much to recommend it.

Threatened Appropriation of the Adelphi.

A MEETING has been arranged by the London Society, to be held in the Hall of the Royal Society of Arts, 18, John-street, Adelphi, W.C. 2, on Thursday, October 24, at 4.30 p.m., to consider the risk now threatening the Adelphi Estate (which is full of priceless relics of the Adam Brothers' work) by reason of its proposed appropriation by the Air Board. The Society is firmly of opinion that more suitable premises could be found than are available on this estate, because its houses are of small area and could not be made suitable for the purposes of the Air Ministry without irreparable damage being done to the exquisite interiors. We are glad to give prominence to this announcement and hope the meeting will be well attended. We consider that the appropriation of such a building would be a grave mistake, which would be regretted by the whole architectural profession.

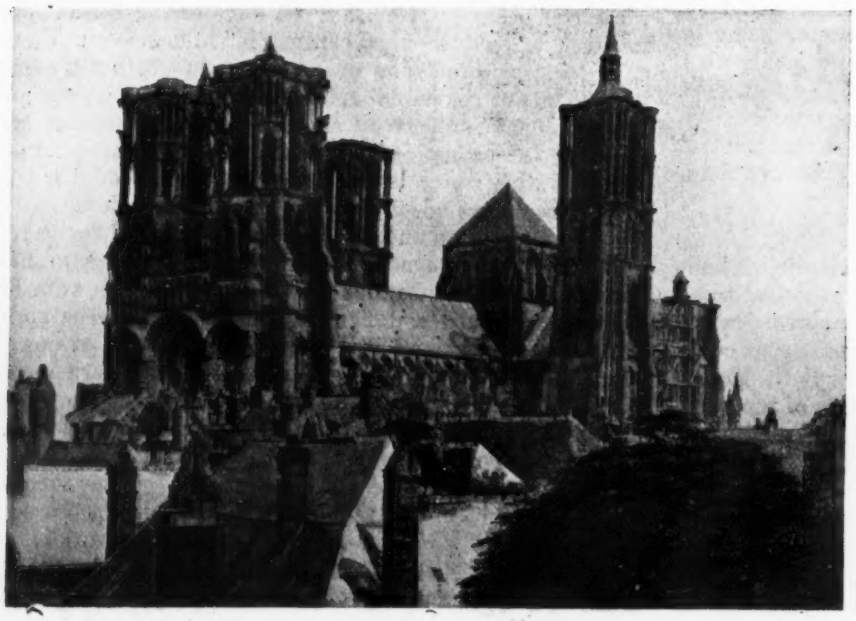


Laon Cathedral.

Destroyed Buildings.

IN an able letter to the *Times* of Tuesday, Sir Thomas G. Jackson describes the brutal disregard of the Germans in France and Belgium of beautiful buildings and works of art. These buildings have been destroyed, not from military necessity, but from pure savagery, and, as the writer says:—

> German malice seems to have been especially provoked by the noble monuments of French art. Rheims Cathedral was the perfect flower of French Gothic, and its sculpture the choicest fruit of the medieval chisel. All this is irreparably lost; the figures are headless, mutilated, and calcined by fire, and the fabric itself is shattered and in danger of collapse. . . The towers are damaged, many of the vaults are fallen, and the solidity of the walls is imperilled. At Noyon the cathedral escaped damage in the spring of 1917 because the Germans had to leave too hurriedly for mischief; but it fell a victim last September, with twenty shell-holes in the roof; the Hotel de Ville has only the damaged front wall standing, and we are told that not a habitable house remains in the town. Soissons Cathedral, with its fine apsidal transept, has been badly damaged—but to what extent we have still to learn. Amiens has been under fire and the cathedral has been hit. The fine church at Senlis, with its magnificent steeple, suffered like the whole town at the first German invasion, when the Huns seem to have excelled themselves in brutality. [It is quite true that the Germans



Laon Cathedral.

[We give two illustrations of Laon Cathedral and a view of the city, which has just been recovered from the Germans. Fortunately it appears that the town, unlike Noyon and so many others, is practically undamaged. The Cathedral itself is uninjured.]

behaved in a characteristic way in the new part of Senlis, but, fortunately, the old town and the cathedral have suffered very little damage.—ED.] The great church at St. Quentin, a grand example of later French geometrical Gothic with fragments of Romanesque work, much fine painted glass, and a double transept, a feature almost unique in France, is reported by your correspondent on October 2 to have had the roof knocked in, the organ pipes stolen, and the floor to be covered with piles of fallen masonry. The façade of the exquisite Flamboyant Hotel de Ville is "gashed with shell splinters"; I trust the fine chimney-piece inside it has escaped. As for the famous pastels of La Tour in the museum, they have gone to enrich some German collection. Of the village churches in the district, apparently not one has survived.

Reprisals. WHAT Sir Thomas says as to reprisals for all this wanton brutality is well put:—

From the artistic point of view it is idle to talk of reprisals for all this brutality. The Germans have no buildings comparable with what they have destroyed; and even if they had it is inconceivable that we should abase ourselves to the Teuton level by throwing them down. No. The Germans have done an injury to European art that nothing can repair, and we are, so far, helpless. We may make them pay for re-building what they have overthrown, but no indemnity can give us back the art of the past. Let us make reprisals by all means, but though we may claim ship for ship we cannot destroy cathedral for cathedral. I would spare even the Kaiser's new Dom at Berlin and the hideous structure that disfigures the meeting of two beautiful rivers at Coblenz, and leave them standing as monuments of coarse Teutonic taste. . . The only true method of reprisal is to make the German understand that brutality does not pay, and that every act of wilful outrage will harden our hearts when the time comes for settlement and make the terms on which we shall insist so much the more severe and crushing.

Fittings for Cottages. THE letter by Mr. Robert Atkinson which we print on another page, contains an excellent suggestion. It is quite true that many suitable cottage designs have been prepared, but, as he says, thinking about fittings does not result in practical tests. His suggestion that money should be spent on experimental buildings with fittings and erected in an accessible place, is an admirable one, which, if carried out, would not fail to produce information of value.

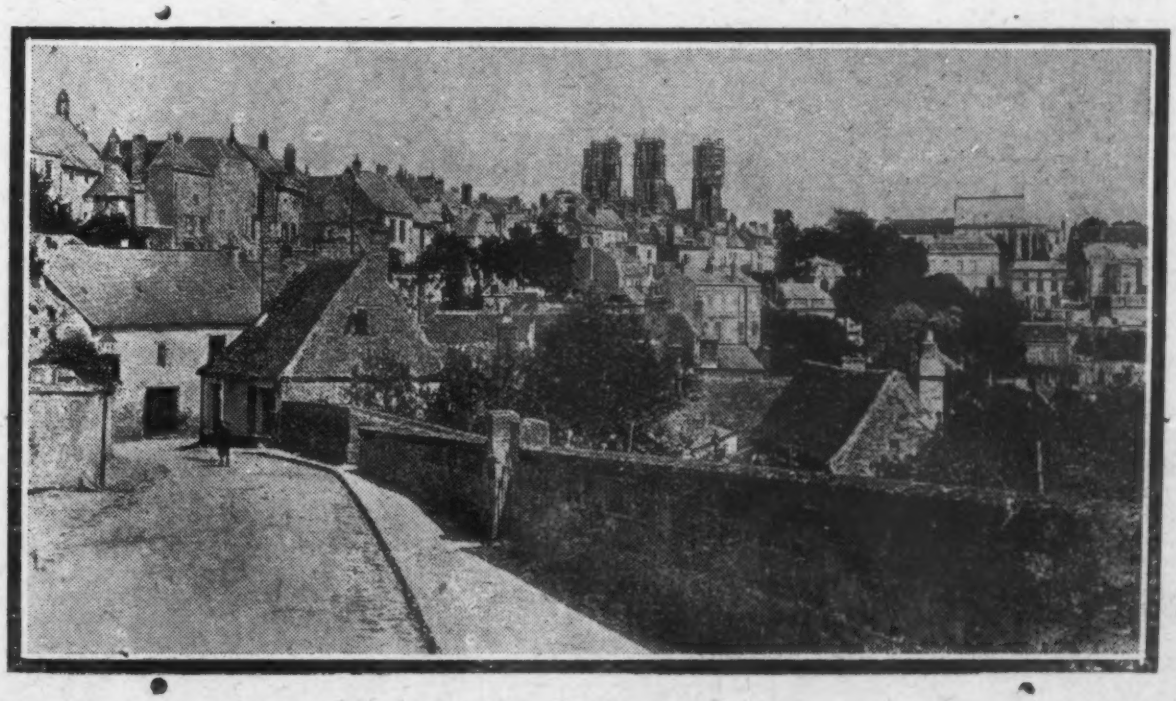
Housing. HOUSING is not merely a question of designing houses, but much depends on preliminary thought given to each particular problem, as without individual thought satisfactory results are not likely to ensue. A low standard of manhood has been revealed by the investigations of the military authorities made during the war. This has had a chastening effect upon all who study problems of national health, and if it results in better contact between students of every phase of the subject, architectural, engineering, medical and sociological, then we may expect enlightened progress to be made; but as things are, no amount of Government Committees, or plans prepared on rigid pre-war conditions of competition, will ever produce anything better than perhaps B3 suburbs with, say, C2 houses, from which it will be useless to expect an A1 population.

Problems of Housing. AN important leading article on Problems of Housing appeared in the *Times* recently, in which our contemporary rightly refers to housing as one of the most urgent tasks awaiting the end of the war. At the same time "it is a definite and practical one, and as such it has a special claim to priority, being literally as well as symbolically a problem of reconstruction. Many other ideals and plans covered by the same word will have little chance of realisation until the material conditions of living represented by bricks and mortar are brought up to a higher standard." Reference is also made to the general interest in the subject, which is a welcome sign of the times. As our contemporary says:—

They are an earnest of good work to come. But perhaps a word of caution on this head will not be out of place. There is a certain danger of overdoing it. All movements of this kind, which are much talked about and urged upon a great many people all over the country, are apt to set up a sort of excitement—by mass suggestion, modern psychologists would say—in which the end gradually fades from view and the means becomes an end in itself. Building houses is not an end in itself, but a means. The end is that the people should be housed in accordance with the higher standard which has come to be regarded as necessary in our time and in the immediate future. . . . But it is not necessary to build everywhere. Local authorities do not always understand this. They seem to have got the idea into their heads that they must build as a sort of duty in competition with other places; and the idea will inevitably be encouraged by men who have land to sell for building or who hope to get contracts for some construction work or the supply of materials, or who possess some other commercial interest. . . .

Possibilities of the Future. THE article also deals with the possibilities of the future, and some of the difficulties:—

The danger is that labour, material and money, which will all be scarce and insufficient for real needs, may be wasted in building houses where they are not wanted. We hope the Local Government Board will keep a vigilant eye on this possibility. Mr. Hayes Fisher, who has been constantly active in preparing and maturing the Government's policy for a long time past, is quite alive to the difficulties of the problem and to the need of distributing materials and labour in proportion to the urgency of needs. . . . The population of the war areas and the occupied countries will have first claim to consideration, nor will anyone dispute it. The initial difficulty is the supply of materials, which will have to be rationed. Then there is labour and finance. The Government's policy of combining the energies of local authorities, utility societies, and private builders seems to us not only the best but the only way of accomplishing the task in hand. But even then patience will be required. The great thing now is to get on with preparations, so that work on a methodical plan may be started at the earliest moment.



Laon.

CORRESPONDENCE.

Housing.

SIR,—"Housing" seems destined to follow the fate of many other national problems and be lost in a flood of argument, proposals and counter-proposals, in the usual Parliamentary manner. One is very much afraid that nothing will result from the present discussion unless some way is quickly found of clearing the ground, and of proposing something which will crystallise ideals and prove a basis for future improvements.

So many have fingers in the pie, and such numbers of committees and experts are dealing with the subject, that nothing seems likely to emerge for some considerable time, and discussion is likely to be prolonged until the actual need for action is upon us. One can then very well picture the frantic haste with which tens and tens of thousands of more or less "ideal homes" will be begun, the tens of thousands of stoves and ranges and sinks which will be demanded, the showers of blue prints which will fly out from the Government offices to the already perfected organisations for dealing with blue prints throughout the kingdom, but leaving the subject matter of these same prints to be afterwards considered and experimented upon in process of construction. One can rely upon the perfect working of the departmental organs, but will one be able to rely upon the dwellings?

Surely it is essential that all experiments and standardisation of fittings and new methods of construction be concluded, the results analysed and made public property before commencing a single cottage.

One is quite aware that suitable designs have been prepared and competitions held, but thinking about fittings does not result in practical tests, and the competitions for designs are admitted to have been a failure inasmuch that they produced nothing but pre-war ideas—ideas almost impossible of execution under present shortage of essential materials. Again these designs are only readable by experts; the public criticism, so essential, being non-existent owing to general inability to 'read" plans.

The general uselessness of the present schemes is quite apparent to those in touch with them, and our fatal tendency to let things slide will once more produce a crisis just at the critical time when speed is essential.

Surely we are far-sighted enough to see that a little money spent now upon a problem involving millions of pounds, would eventually be a great saving.

The £10,000 which a great newspaper can offer for improvements in flight, spent upon twenty or thirty experimental buildings with fittings, erected, say, in Hyde Park, where all interested would readily visit them, and not in some inaccessible wilderness, would not fail to produce information of the greatest value.

The working-man of to-morrow needs a house in which his ideals can grow, and to erect cottages which will be out of date in five or ten years, is only to renew the trouble more acutely in the future.

ROBERT ATKINSON.

The Scottish L.G.B. and Housing.

SIR,—The views expounded so ably by your well-known correspondent, Mr. M. H. Baillie Scott, in your issue of the 20th ult, cannot be gainsaid, for a thin wall is less cold-resisting and less heat-retaining than a thick wall. It will also be less sound-proof when used as a partition wall, but it will be quite stable as an exterior wall if sufficient piers are used. I ought to have explained in my previous letter that the hundreds of Government cottages which have been built with 2⅝-in. Pudloed curtain walls have had piers to support the roof and to strengthen the wall.

I would prefer to live in a house with such concrete walls than in one built with wooden walls, but I would not live in either if I could choose to remain in my old Jacobean house which has walls 2ft. thick. On the other hand, a house with dry, thin concrete walls is far more hygienic than a castle with thick stone walls which are damp.

One of our greatest Admirals wrote me last year that his Norman castle (his ancestral home) had several rooms untenantable, although the walls are 3 ft. thick, because they were without a dampcourse, and the reason of his letter was that he wished to tell me that the building had been made perfectly dry with an *internal* cement rendering.

I have lived in a caravan for several summers and autumns, and found it very snug and warm in the cold autumnal nights, although the wood sides are so thin. While wood was formerly used throughout England for workmen's dwellings in towns, there is not the slightest doubt that we should not revert to that type of thin wall construction unless necessity demanded it.

There is a house shortage, and there will also be a labour and material shortage after the war, and the working man would rather live in a house with thin walls than take his wife to his parents' house, or into lodgings. It would be of little use telling him to wait a few years for a more substantial house. The returning warrior will require his domicile quickly, otherwise it may lead to industrial unrest.

This is such a vital question that the Government have appointed committees to investigate.

Provision for cottages ought to have been made long before the war started, as every architect and builder knows. It is most unfortunate that the Increment Duty Tax made the land lawyer and the builder so nervous that they ceased to build cottages a few years before the great war.

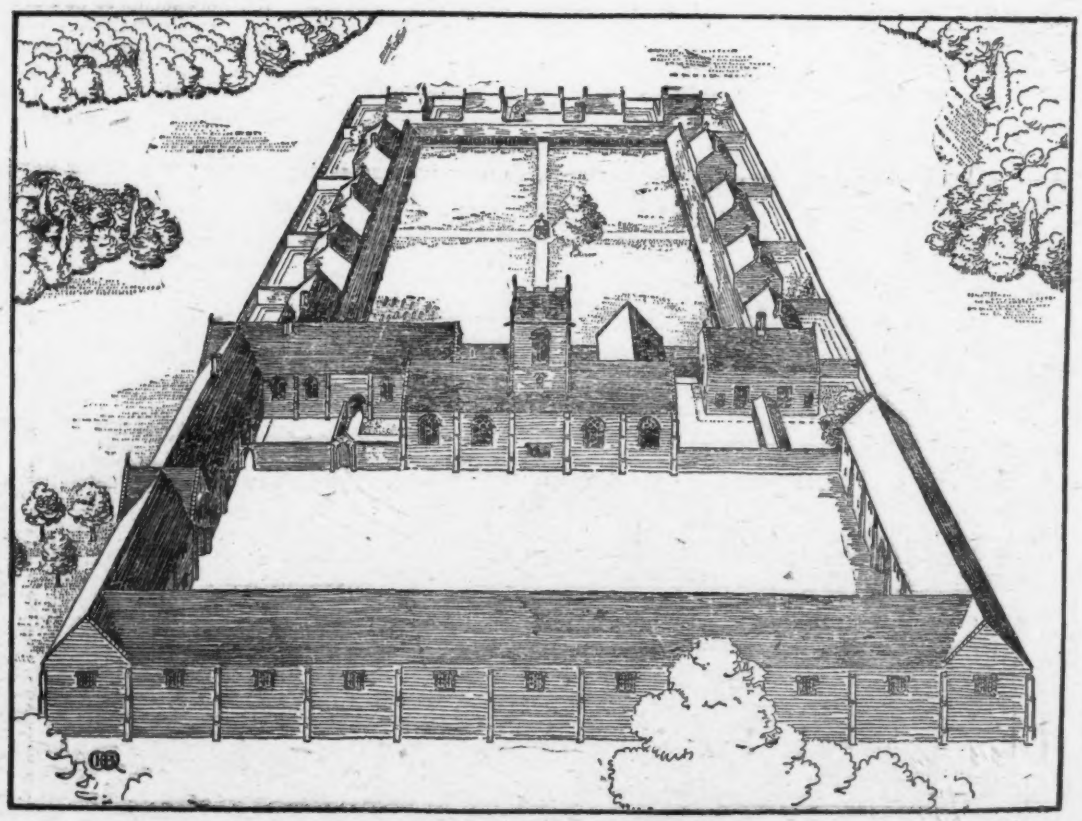
J. H. KERNER-GREENWOOD

King's Lynn.

Industrial Council for the Building Trade.

SIR,—With reference to the article in your issue of October 4, in the second paragraph, column 2, you say that the contractor's energies can be helpfully applied as far as productive capacity is concerned, by putting "go and dash" into his employees by his personal influence and appreciation. Now, Sir, it is no doubt interesting reading, but master builders must wake up to the facts and see that the clerical staff, who have the responsibility and brain power, are properly remunerated and made worthy of their hire. At the present time the clerical staff are receiving improved salaries, and yet in many cases they do not reach the earnings of the bricklayer or carpenter, and in addition they have to live away from home. The organising work in a building department is all-important, and consequently it is all the more necessary that those engaged on such work should receive every consideration.

W. H. ALDRIDGE.



Bird's-eye View of Carthusian Monastery.

From "A History of Everyday Things in England." By MARJORIE and C. H. B. QUENNELL. (See page 242.)

EXHIBITIONS OF THE WEEK.

In our last "Exhibition Notes" we had occasion to mention the exhibition of water-colour drawings by Mr. E. Barnard Lintott at the Leicester Galleries, but were obliged to hold over a full account of this interesting exhibition till later. Mr. Lintott's work—as we then mentioned—has merit; and as a water-colour painter he is certainly coming to the front.

The present exhibition shews this in his studies of rural Sussex and of Holland, subjects which have a certain likeness in their wide distances, and presence—felt, if not discerned—of the sea. We feel this in such subjects as "Rye," as "Chanctonbury Ring," seen above the Downs, as a "Gray Day in the Dunes, Holland," or at "Amberley," that Sussex home of Edward Stott, as "Autumn at Fittleworth," or "Pulborough." This is good water-colour technique, based on the tradition of Cozens, David Cox, and the early work of Turner.

We get a slightly different technique and an entirely different atmosphere in Mr. Lintott's Russian sketches. For this artist has been working for the Foreign Office through the war, and was in Petrograd during the earlier days of the Revolution, escaping, fortunately for himself with the Ambassador, his place in the Embassy being taken by the gallant naval officer who was foully murdered. Thus his scene of "The Attack on the Winter Palace by the Bolsheviks" has the element of actuality; and his cold wintry scenes of the "Neva at Petrograd" and of "Finland" have the same interest, apart from their pictorial merit.

We touch the war also in Captain Martin Hardie's water-colours, now exhibited at the Walker Galleries in New Bond-street; but it is the backwaters of the war in France and Italy. The quality of the work here is astonishingly variable. Some of it must be frankly owned at once to be very poor and thin; we refer directly to "Evening on the River Spinti," "Blue and Gold Italy," "In the Land of Vineyards," and 'Arquata." But after conscientiously noting this objection there remains a great deal to be said in praise of what remains. Captain Hardie has evidently the feeling for colour; we note this in his "Bridge, Serravalle" and his "Boulogne." But this feeling is based on good drawing, as shewn here in "The Church, Arquata," "A Village Street in Italy" (a really clever bit of perspective in a narrow climbing Italian Calle), and in an old "Piazza at Padua." His cloud studies ("Forked Lightning and Moonlight" and "Northern Italy, Prelude to Rain") are often brilliant; and anyone who knows anything of the technique of water-colour knows this is a test of power. No less admirable are his religious processions at Boulogne, full of colour movement, almost of what psychologists call "mass suggestion." Lastly, quite apart from his water-colours, Captain Hardie shews himself as a fine etcher. His work in such subjects as "La Vallée de Denacre," "The Four Trees, Petit Andelys," and Boulogne Harbour," exhibits mastery of this difficult branch of art. The art of etching is by no means exhausted, and one may hope that with so much to his credit Captain Hardie will pursue this line of pictorial art with ever-increasing success.

Timber Merchants and Afforestation.

The annual meeting of the Home Timber Merchants' Association of Scotland, held in the Central Station Hotel, Glasgow, took place on the 10th instant. The following resolution was adopted:—"That this meeting of Scottish home timber merchants hopes that an energetic policy will be adopted by the Government with regard to afforestation, and that private as well as State enterprise will be duly encouraged; and, in order that the work may have every chance of being efficiently and economically carried on in Scotland, that an opportunity of criticism and suggestion of forest schemes be given the representatives of the Scottish home timber trade."

GENERAL NEWS.

Housing, Rhymney.

At the meeting of the Rhymney Council, on the 10th inst., Mr. A. F. Webb, of Blackwood, was appointed architect to the proposed new housing scheme.

Award of the Military Cross.

Captain Roger Liddesdale Palmer, London Regiment, who has been awarded the Military Cross, is the elder son of the Rev. T. Liddesdale Palmer, vicar of St. John's, Roundhay, Leeds and Mrs. Palmer. He is an architect in civil life, having served his articles with Mr. Percy Robinson, of Leeds.

Necessary Building Only.

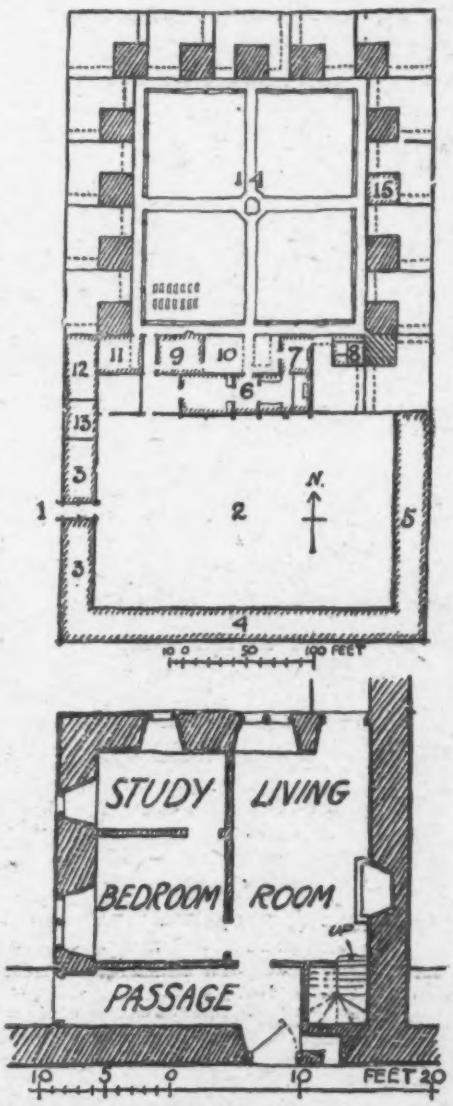
An Army Council Instruction (1,088) states that in view of the present position regarding man-power and supply of material and fuel, the War Cabinet has recently ordered that the War Priorities Committee should issue instructions that no new works shall be started except such as are immediately necessary for winning the war, and that any exceptions to this rule shall be brought to the notice of the Committee only on the personal authority of the Minister of the Department in question. Each Department is to be instructed to carry out a thorough investigation into its manufacturing and construction programme, and to report within a fortnight to the Works Construction Sub-committee the works now in hand which require a high priority, and those which might be postponed. On receiving the reports the War Priorities Committee should decide whether any regrading is necessary. The criterion whether a new work is directly necessary for winning the war is to be rigorously applied by those concerned, in every case, before requisitions for work are put forward The Army Council considers that the only practical way to apply the orders of the War Cabinet is to exercise very careful discrimination between demands and real needs; anything and everything in the way of convenience, as apart from necessity, must be ruthlessly cut out of every programme that involves building.

City of London Police Reserve.

The Officer Commanding "D" Division is appealing for recruits to complete the strength, many men of the new military age having been called to the Colours. He specially asks, in his recruiting campaign, the assistance of principals of large firms and institutions. Men over fifty-one years of age, or holding tribunal exemption for at least six months, are eligible, as also are those of the new military age—Grade 3—without an exemption certificate. Men in "protected occupations" who hold "Protection certificates" can be accepted. Sleeping accommodation (free) is provided at Old Jewry for those whose duty will not allow them to reach home. Meals can also be obtained at strictly moderate charges. Applicants should address "The Hon. Secretary, Recruiting Committee, 'D' Division, C.L.P.R., Cloak-lane Station, E.C. 4." A sergeant will be in attendance at Cloak-lane from 11 a.m. to 3 p.m., each day, to whom personal application can be made, or after 7 p.m. to the Officer in charge of the Reserve at the station.

Building after the War.

Mr. Hayes Fisher, President of the Local Government Board, addressed the members of the Birmingham City Council on Oct. 6. The Lord Mayor, who presided, said that it had been calculated that during the next twenty years Birmingham would require on an average to build 5,000 houses per annum. Mr. Hayes Fisher said that while they were aiming at building 300,000 houses within twelve months after the war was over, they were anything but sure that they would be able to do it. Three hundred thousand houses would require 350,000 men to build them if they were to be built in a year, quite apart from the men who were to clear the sites and do many other necessary things. They doubted if they would be able to build the 300,000, even although they got all the help they could from local authorities, public utility societies and private builders. It was not only workmen's dwellings that would be required after the war. Numerous other buildings were required, and there would be an immense amount of repair work to be done. "Look at the devastation in the North of France! Look at Belgium! God only knows what the Germans may do before they leave both countries. All that has got to be reconstructed." There would be a great demand for building and repair work in France and Belgium, as in this country, and we should have to share with them the material that would be available. He only hoped he would be alive to see 300,000 houses built in this country at the end of the first year after the war. Who was going to build them? He should be very sorry to be the head of the department in London which was responsible for the erection of 300,000 houses between Newcastle and Truro. The private builder could not build the houses. The greatest hope was in a combination of local authorities with public utility societies or groups of builders, and the Government had generously offered to assist them in finding the money.



Plan of Carthusian Monastery and detail of one of the houses.

From "A History of Everyday Things in England." (See next page.)

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ILLUSTRATIONS.

L.G.B. and R.I.B.A. Cottage Competition.

The cottage designs we publish this week include some work by Messrs. Stockdale Harrison & Sons, of Leicester, which are amongst the best contributed in the whole series. Their elevations have a very pleasing character.

Bradford Town Hall Extension.

This work was commenced in 1904 and completed and opened in 1909, at a cost of about £150,000. The extension contains new Council Chamber, Reception Hall, and Magistrates' Court, with suites of Committee Rooms and apartments for the Lord Mayor, as well as office accommodation for the Education, Treasurer's, Gas, Electricity, Medical Officer's and Architect's Departments.

The architect was Mr. F. E. P. Edwards, F.R.I.B.A., who designed and supervised the erection of the whole of the work, with the late Mr R. Norman Shaw, R.A., as consulting architect.

OBITUARY.

Mr. Ralph Nevill.

Mr. Ralph Nevill, F.S.A., of Clifton House, Castle Hill, Guildford, whose death was recently announced at the age of seventy-two, was elected an Associate of the Institute of Architects in 1870, Fellow in 1877, and was placed on the list of Retired Fellows in 1909. He served his articles with Sir G. Gilbert Scott, and remained with him for some years as assistant. He started practice in Godalming, and afterwards had offices in London, first in New Bond-street and later in Chancery-lane. He took an active part in the work of the Society of Antiquaries, being hon. secretary for Surrey, and serving on the Council for forty-two years. He was the author of "Old Cottage and Domestic Architecture in S.W. Surrey" (Guildford, 1889) and other works.

Mr. W. E. F. Ollis.

We regret to announce the death of Mr. W. E. F. Ollis, of Bingham-road, East Croydon, on October 1. Mr. Ollis was well known as a representative of the Associated Portland Cement Manufacturers (1900), Ltd., and had a large circle of friends and acquaintances in the building trade. The news of his death, at the age of 53, will be received with regret by all who knew him.

Proposed Municipal Architect, Rotherham.

At Rotherham Town Council the Chairman of the Housing Committee alluded to a recommendation to secure an architect at a salary of £500, it being the opinion that the time had now arrived when a housing department should be formed, consisting of an architect and two assistants.

The British Red Cross.

Lord Devonport, speaking at the Savoy Hotel recently, said the Lord Mayor was making an appeal for a million pounds for the British Red Cross—not on charitable grounds, but on the ground of national obligation and duty.

BOOKS.

A History of Everyday Things in England. Written and illustrated by MARJORIE and C. H. B. QUENNELL. Containing 200 pages, including 86 illustrations specially drawn by the authors, and 5 colour plates showing the development of costume. (London, B. T. Batsford, Ltd., 94, High Holborn, W.C. Price 8s. 6d. net.)

THIS is an admirable little book both in conception and execution, on which authors and publishers are to be congratulated. It suggests, in a way, Green's "Short History of the English People"—a fascinating and highly successful account of the life and evolution of the people of this country, which deals largely with their political activities as well as their everyday life. The book before us is an account of the everyday things—work, play, &c. —of the people, written primarily for boys and girls of public school age, although we have no doubt it will be largely read by anyone interested in the earlier life of Great Britain, for the period which is dealt with in this, the first volume, is from the Norman Conquest to the end of the Gothic period in the fifteenth century, and a second volume is to follow, which will continue from the sixteenth century to the close of the eighteenth. So far as they have been able, the authors have illustrated in each chapter the same things—castles, knights, dress, houses, games, household scenes, and so on—so that readers can trace their development through the centuries, and in each chapter is a historical chart which links up the work done with the people who did it. There are illustrations of Norman ships and castles, and the monasteries where the monks endeavoured to keep alive civilisation. In short, the work is an account of the people themselves, their surroundings and belongings, their occupations and amusements, and it reanimates the England of the past in a vivid and delightful way.

The book is the outcome of the authors' strong conviction, with which we are in hearty agreement, that "anything which helps to give us a picture of bygone times must make the history of the period more interesting, and you cannot have a picture without a background to it."

The object is not merely to describe, but to explain how *this* form was evolved and why *that* method was adopted, avoiding technical terms, but insisting always on the practical side. It should also serve to stimulate the constructive faculties of children. Much attention has been paid to the development of the house and its furniture, and many illustrations are given. In the Great Hall is depicted a medieval banquet, with its curious dishes, its mummers and minstrels; and included also are men, women and children of various ranks at work and play. All this is not mere fanciful reconstruction, the details are taken from such sources as the great twelfth-century chronicle of Jocelin of Brakelonde, the Domesday Book, Froissart, Chaucer, and many manuscripts. Moreover, what gives special value to these pages is that Mr. Quennell is well known as a practising architect who is familiar with the problems of construction, while Mrs. Quennell's charming drawings of figures and costumes are well known. In their Introduction they make many interesting remarks on the constructional side of the crafts, &c. But we need say no more about the book, which could hardly have been produced at a more opportune time, and should be widely read. The illustrations are a happy mean between the pictorial and the conventional drawing of the architect or decorator.

Fan Vaulting.

From "A History of Everyday Things in England," by MARJORIE and C. H. B. QUENNELL.

PHOTO: BEDFORD LEMERE.

BRADFORD TOWN HALL EXTENSION: GENERAL VIEW.

MR. F. E. P. EDWARDS, F.R.I.B.A., ARCHITECT. THE LATE R. NORMAN SHAW, R.A., CONSULTING ARCHITECT.

PHOTO: BEDFORD LEMERE.

STAIRCASE.

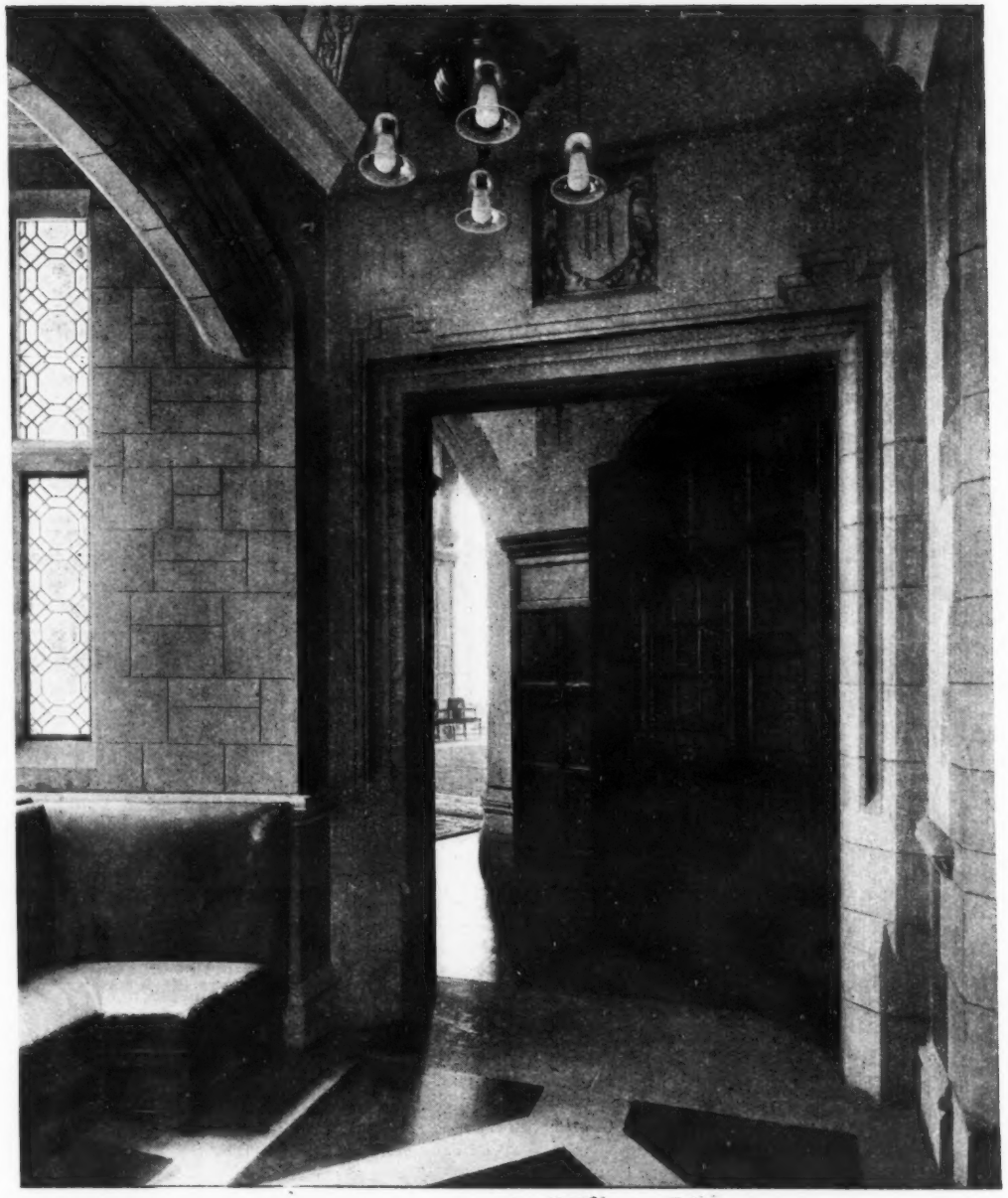
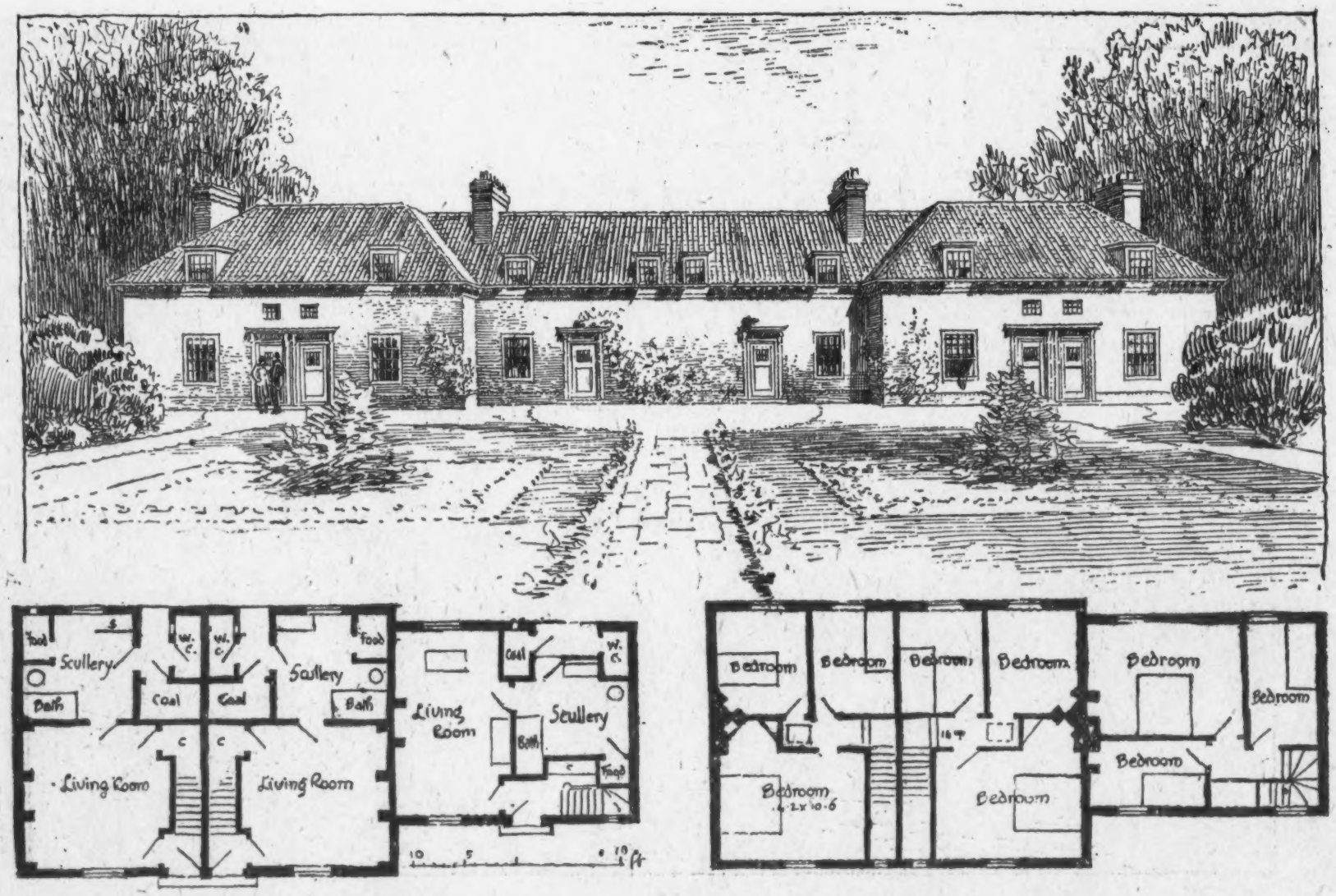


PHOTO: BEDFORD LEMERE.

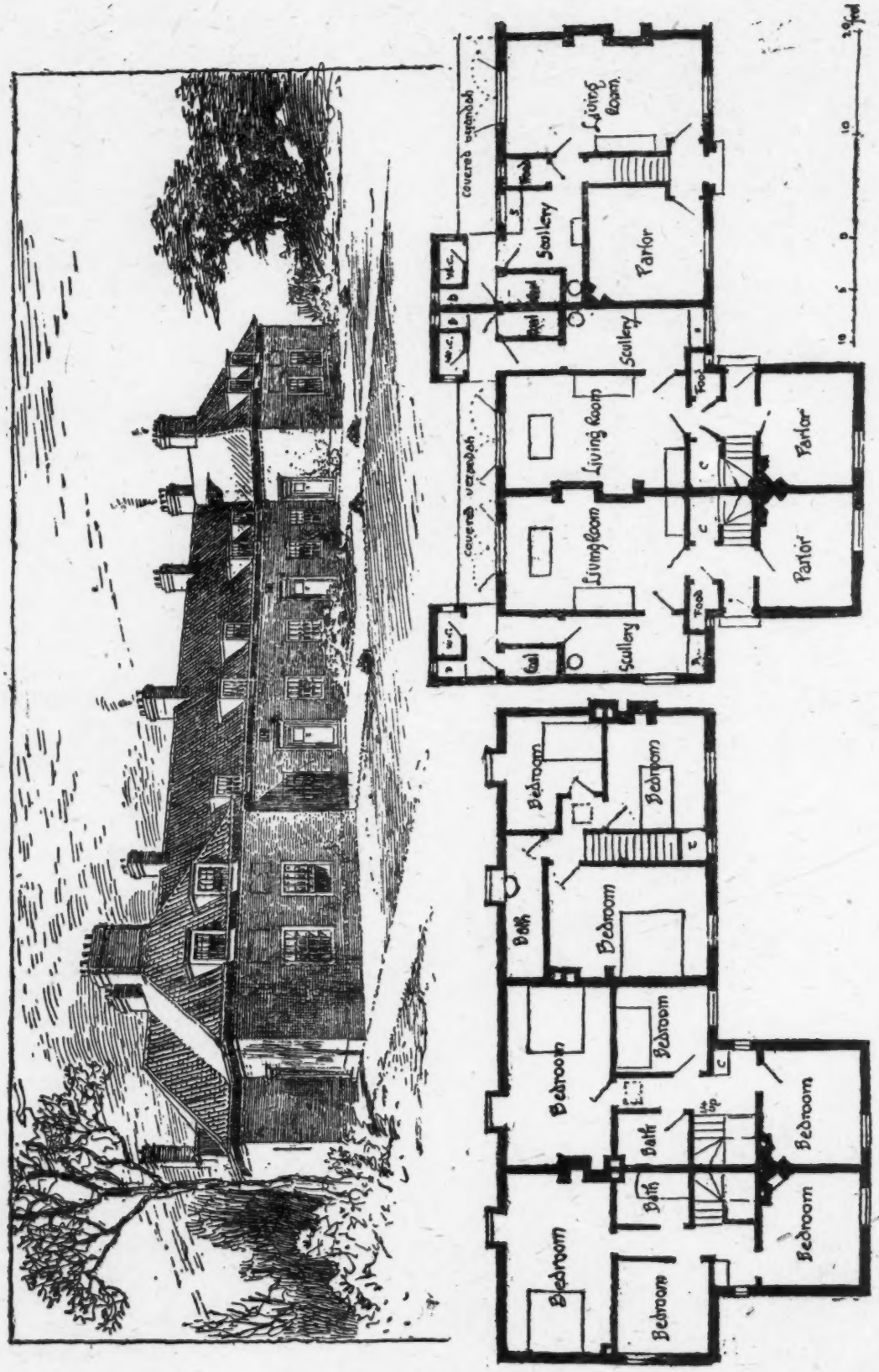
ENTRANCE TO RECEPTION HALL.

BRADFORD TOWN HALL EXTENSION.

MR. F. E. P. EDWARDS, F.R.I.B.A., ARCHITECT. THE LATE R. NORMAN SHAW, R.A., CONSULTING ARCHITECT.



THE L. G. B. AND R. I. B. A. COTTAGE COMPETITION (MIDLAND AREA). CLASS A.—FIRST PREMIATED DESIGN, BY MESSRS. STOCKDALE HARRISON & SONS.



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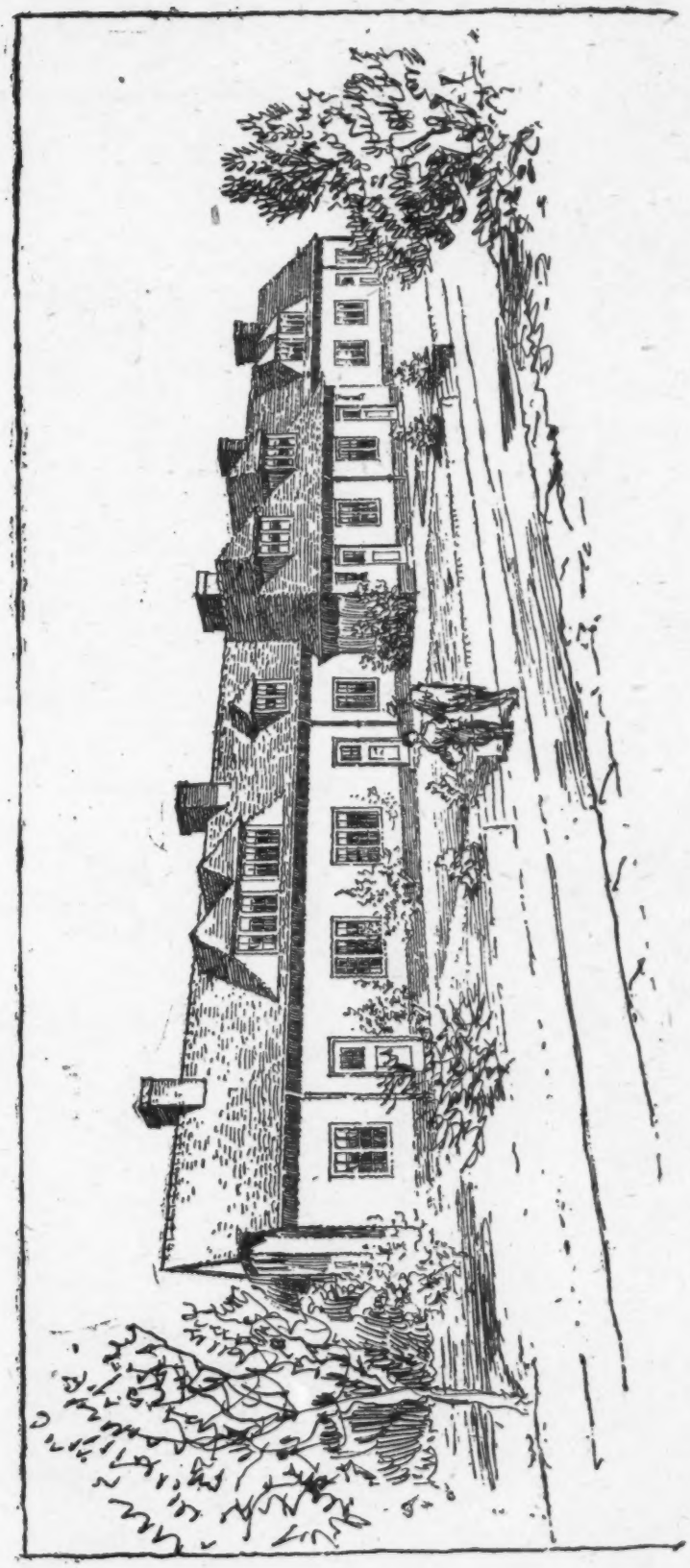

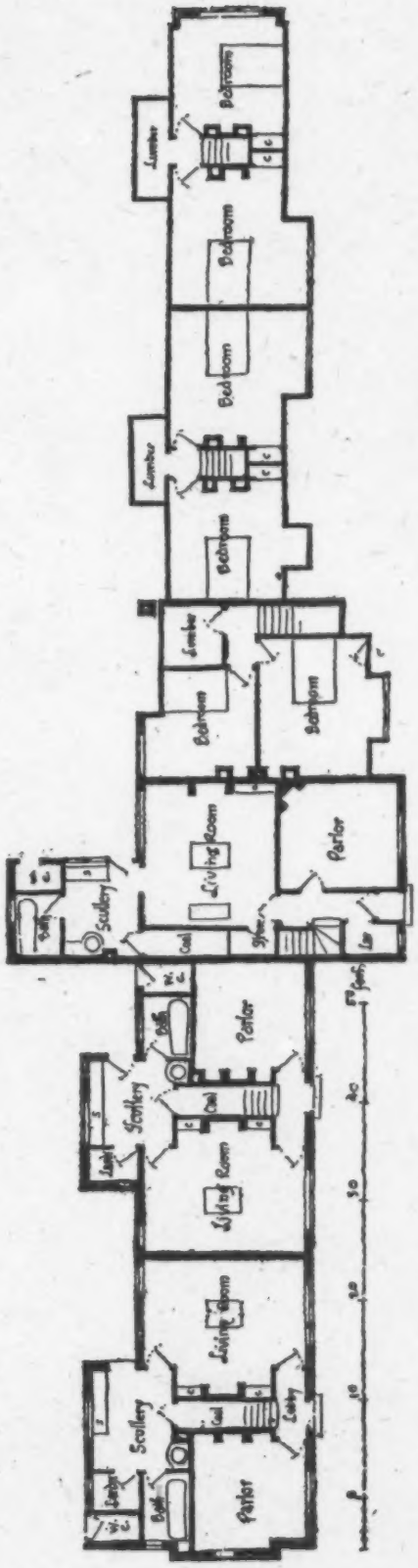
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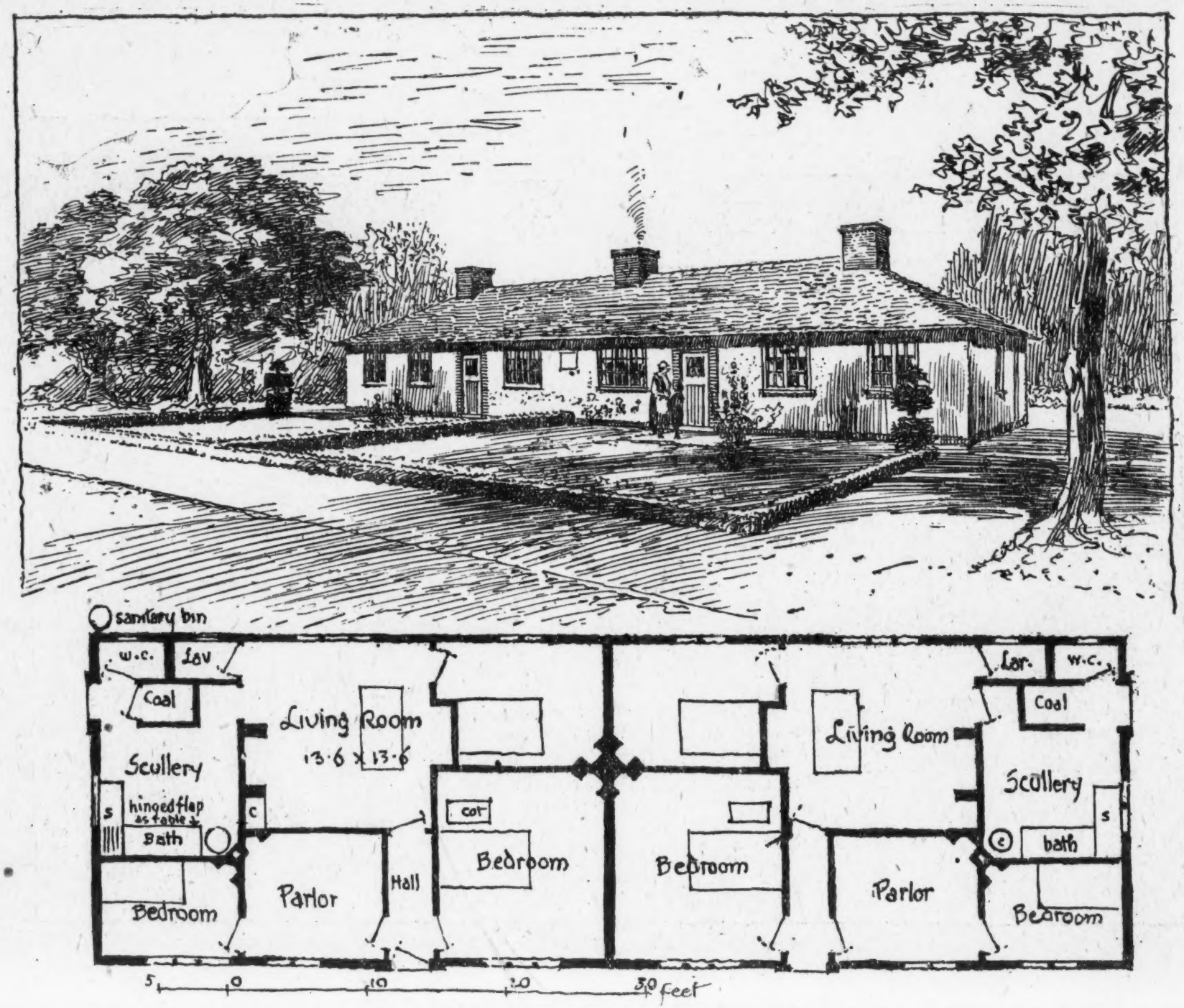


THE L. G. B. AND R. I. B. A. COTTAGE COMPETITION (MIDLAND AREA). CLASS D.—FIRST PREMIATED DESIGN, BY MESSRS. CLELAND & MAYWOOD.

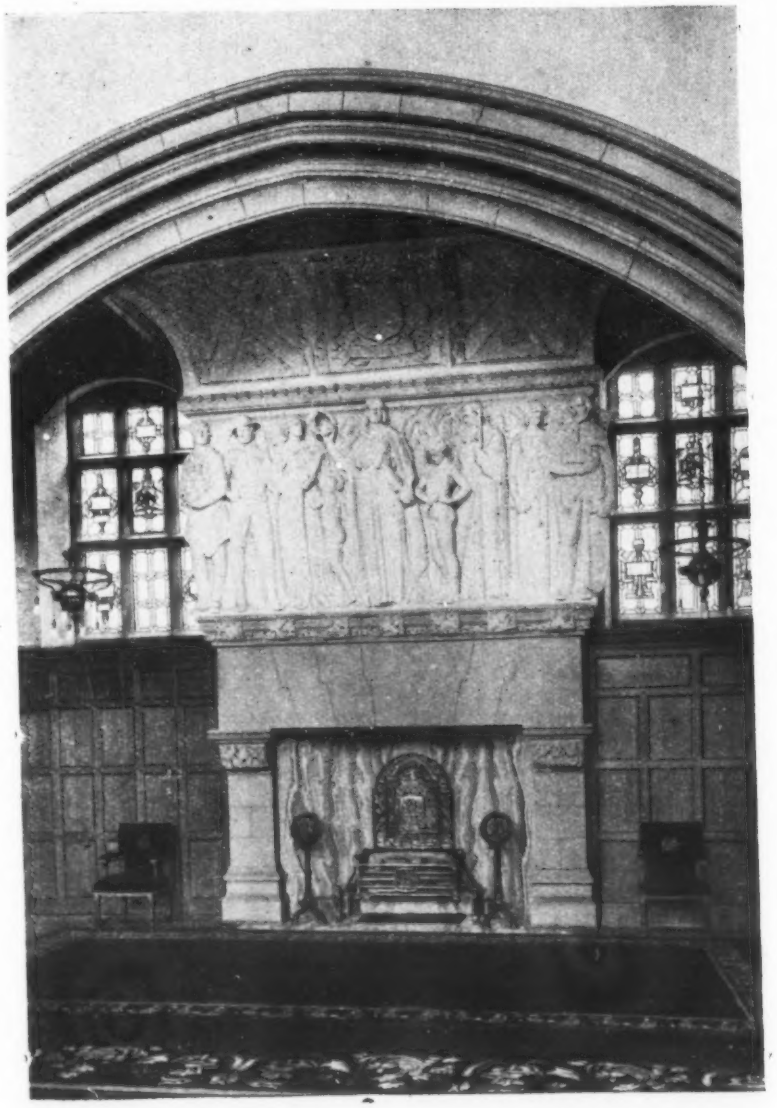


PHOTO: BEDFORD LEMERE.

DETAILS OF FIREPLACE IN RECEPTION HALL.

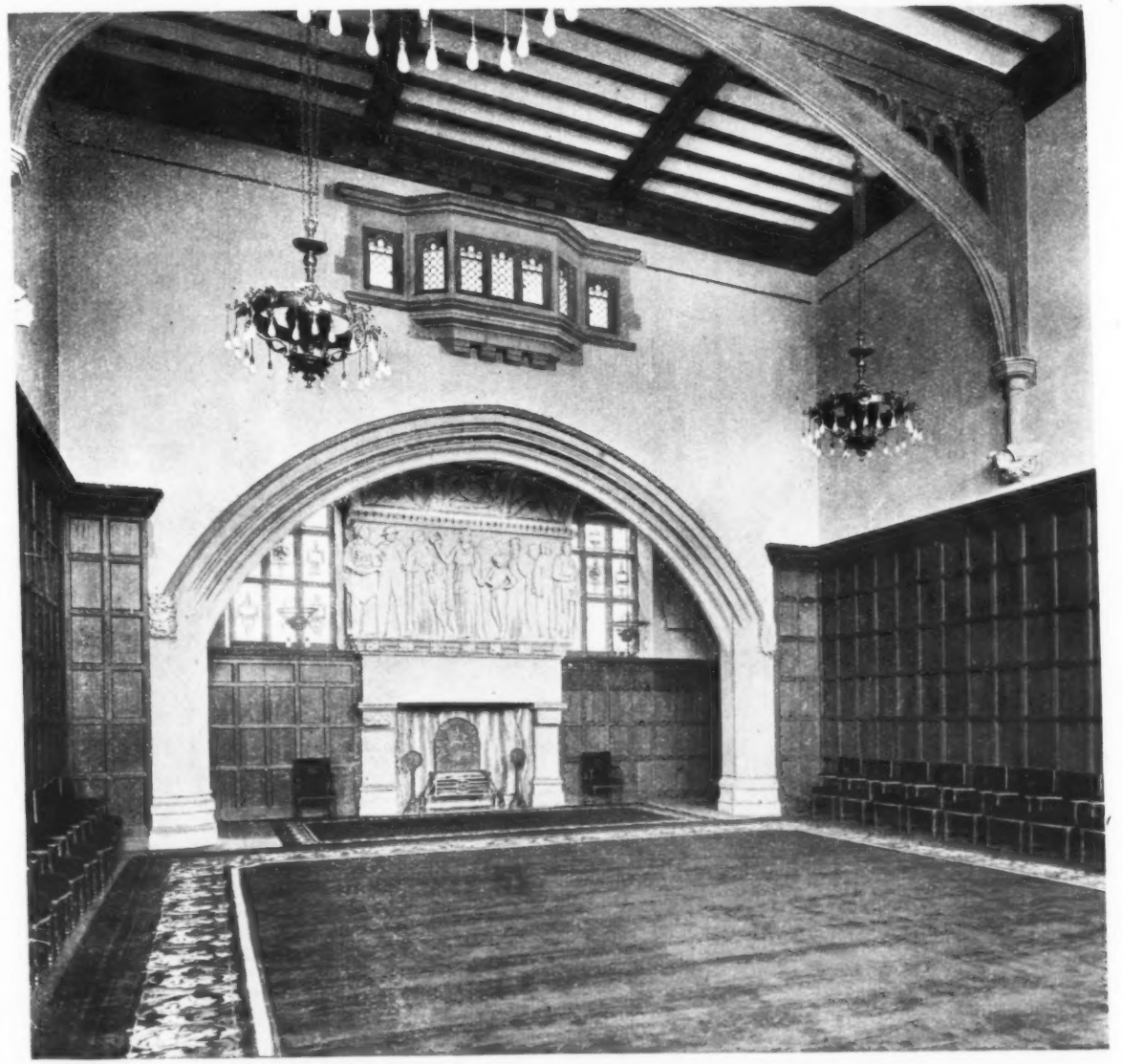


PHOTO: BEDFORD LEMERE.

RECEPTION HALL.

BRADFORD TOWN HALL EXTENSION.

MR. F. E. P. EDWARDS, F.R.I.B.A., ARCHITECT. THE LATE R. NORMAN SHAW, F.R.I.B.A., CONSULTING ARCHITECT.

BRADFORD TOWN HALL EXTENSION: LORD MAYOR'S PARLOUR.

MR. F. E. P. EDWARDS, F.R.I.B.A., ARCHITECT.

THE LATE R. NORMAN SHAW, R.A., CONSULTING ARCHITECT.

PHOTO: BEDFORD LEMERE.

A NATIONAL ARCHITECTURE.—III.

BY W. R. LETHABY.

THE GEOMETRY OF PLANNING.

WE have few books on architecture treating of its factors and powers and the customs which it carries forward, in proper categories or as general ideas. The assumptions on which we work are at once vague and narrow. They are rather of the nature of superstitions than rational principles, and we have to open out new avenues of thought, experiment, and adventure. Our books have been practically all cast in the historical mode, except a few dry compilations of the nature of statistics and tables—"books which are no books." This causes designers to look at nearly all problems through the screen of "styles" rather than simply and directly as the designer of an air plane looks at his. We do not trouble about the period of a plum pudding, but only about the materials and the making, and so it should be with every other work and art.

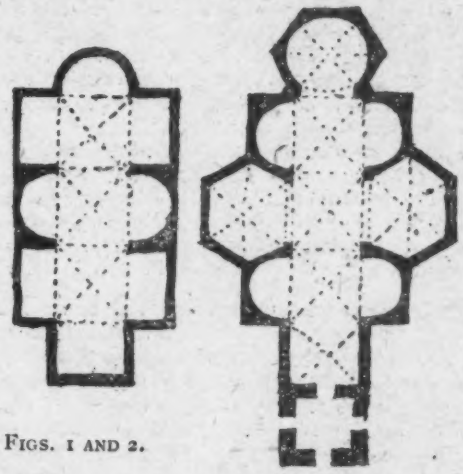
To imitate the well-known saying of Sir H. Wooton—Right building has "three conditions": Convenience, Continuance, and Contentment. Planning is not only a matter of convenience, but questions of stability and of suitability for roofing are of controlling importance. There must further be a sense of right arrangement and of order in the proper packing of parts together. Most of the famous architectural structures of the past have been single chambers or cells, although many Roman buildings are wonderful examples of the association of a great number of cells into organic relation by masterly planning. We need a study of the planning results of the past. A very slight knowledge is enough to show how the geometry of building was often explored in a scientific spirit. Roman, Byzantine and Gothic schools of building all show definite exploration of the possibilities of planning, but this vital matter has been hopelessly obscured by dull books on orders, styles, periods and proportions. The practical facts of Roman building are very different from the views which are likely to be found in volumes on Roman architecture. Choisy's, and Middleton's works may be recommended as exceptions.

Directly one goes behind the "orders" an entirely new view is disclosed of Roman building powers. The planning of the baths, palaces, and basilicas are wonderful exercises in architectural geometry and mechanics, and hundreds of minor buildings, especially the tombs, are extraordinarily ingenious and various In these the powers of circles and polygons seem almost to have been exhausted. The plans of Byzantine churches when compared in a large group show a similar delight in experimental variation. Again, a study of the mediæval cathedral as a structure—a cell—brings out a purely experimental side, which the scholars of style have usually not understood. Street's essay on the development of the chevet of the French cathedrals is, however, an admirable piece of work on plan development. Villars de Honnecourt in the thirteenth century and Leonardo da Vinci in the sixteenth showed a similar interest in the principles of planning. The modern French schools seem to carry on alongside of their studio style-designing an admirable tradition of experimental planning.

THE ARCHITECTURAL CELL.

The modern study of planning might be laid out into an exciting subject for the schools—an architectural geometry. The student would begin with simple unit cells, and go on to explore all the means of enlargement by annexes and apses, having regard to the roofing system. Then further he would proceed to the orderly association of cells in complex structures. The advantages of the circular or square form in containing a maximum of space within a given amount of walling needs to be brought out.

The study of the architectural cell would begin with some general consideration of the properties of the simple forms in which such cells have been erected. It should be understood that I call the Pantheon or Sta. Sophia a cell. These forms are the rectangle, the square, the polygon, the circle, the hemicycle, the ellipse. Then the possibilities of increasing the size of such cells by extensions should be examined almost in the spirit of

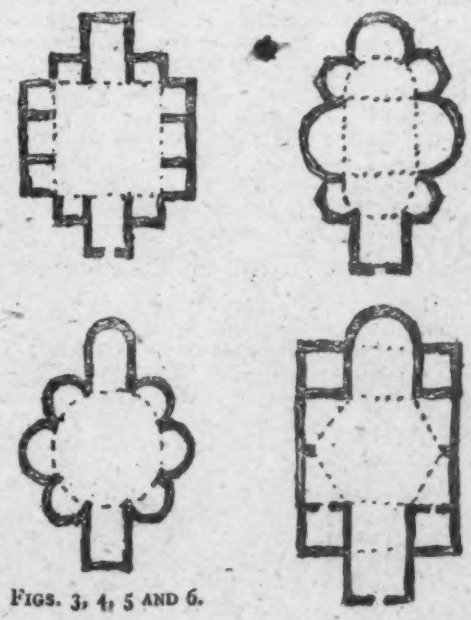


FIGS. 1 AND 2.

playing a game—the planning game. A certain country setting itself to be thorough in war introduced a war-game.

An ordinary room may vary in many ways, as being long and low or square and high. A large rectangular cell may be extended by transepts, thus giving the forms I T +. The rectangular cell may also be extended by apses and recesses as well as by enlargements depending on the support of isolated columns on which I do not propose to touch. Figs. 1 and 2 may suggest the large variety of results which may be obtained in opening annexes to a central body of three bays. Fig. 2 appears over-quaint, but, as will be seen, it made itself in this planning game.

Besides this rectangular or axial type of plans there is the great family of buildings with central plans. Planning necessarily follows the roofing system, and many of the finest forms and dispositions depend on domical coverings over square, circular and polygonal areas. It is thus much to be desired that some system of domical, or perhaps conical, roofing should be brought into more general use in our important buildings. The development of concrete roofing may very well make this reasonable in the near future. Some simple experiments on the



FIGS. 3, 4, 5 AND 6.

central type of cell are shown in Figs. 3–6. It is not suggested that these rough sketches are suitable for our modern needs and ways of building; neither, on the other hand, are they imitated from old models. Although they look curiously Byzantine and Romanesque, this is because the old builders were experimenting along similar lines.

ARCHITECTURAL ANATOMY.

Besides experimental study of planning cells, some sound training in the geometry of solids and volumes is required. It is needed, as are all these things, not to lead up to some special ingenuities and *tours de force*, but to gain the instinctive knowledge of forms which the architect should possess. The solid geometry of the mathematicians is usually treated in what builders must find a dry manner remote from their special needs, but the questions of projection, development of surfaces and penetrations might be made of fascinating interest if dealt with in relation to building problems. I cannot believe that the mysteries of the graphic investigation of the mechanical problems of building need be less interesting. Such a course of study as that suggested may seem academic, but "academic" is only a word, and it need not frighten us. In even the very practical art of flying a course of theory precedes actual practice, I believe. Something of the sort, which need not take long, is desirable for all who are engaged in planning even the most simple of structures to give flexibility of mind and the instinctive geometrical sense that every architect should cultivate. From such a general introductory course the student would soon pass to the consideration of planning for special purposes. Here again many general principles can be brought out. For instance, in house-building the advantages of a square plan need to be demonstrated. A compact system is economical and conserves warmth. On the other hand, a more rambling arrangement of rooms is better for catching the sunshine. Much of general application could be taught in regard to the principles of roofing and the avoidance of gutters, snow-traps and awkward penetrations. Then the general anatomy of more monumental buildings might be touched on, illustrating by examples: main blocks and wings, fore-courts and central courts, lantern lighting, access and axis, staircases, and so on.

In such a study of principles the "styles of architecture" disappear, or rather they merge into one universal art of building.

By architectural geometry I mean something beyond the ordinary diagrams and propositions—"produce line A B to C"; but I believe excellent books of modern character already exist. I may perhaps venture to say that I have hardly known anyone myself included—who does not fumble out questions involving the penetration of cylindrical, conical and spherical forms; but these are just the matters that should be set straight in the schools once for all. The geometrical sense is not to lead to any special ingenuities and contortions, but to a comprehensive knowledge of structural form. Such descriptive geometry would pass insensibly into structural mechanics. "You see it will be like this and this; the roof will cover it so, and the weights will be taken by these piers and apses." This was the knowledge that Wren had in a pre-eminent degree; he "saw" his forms and "felt" his weights; and St. Paul's was built as a great organic structure to endure. The mediæval masons looked on their work in much the same way. Although their knowledge of mechanics was much more empirical than ours, the old books on masonry show that they thought of geometry as the theoretic ("speculative") basis of their art. This interest in geometry entered into the formative forces of Gothic architecture, and Euclid was regarded as the founder of masonry.* All great architectural works have this in common: they have been erected in the structural style.

* See V. le Duc, *Trait.*

FUEL ECONOMY IN PRIVATE HOUSEHOLDS.*

By A. H. BARKER, B.A., B.Sc., Wh.Sc.

Lecturer in Heating and Ventilating Engineering, University College.

THE next important question which arises is the comparison between coal and anthracite. Now anthracite as a fuel has just about the same heat value as coal, but it is *par excellence* the fuel for domestic purposes. The principal and outstanding advantage of it is that it is largely composed of carbon, and there is a very small proportion of flame-producing elements in it.

I do not propose in these articles to go into the composition of fuels, but only to say that there are some fuels which are called "bituminous" fuels, which will produce flame, smoke and soot, and others, hard fuels, of which anthracite is the most perfect example, which do not produce flame, being composed largely of carbon only.

Now anthracite is commonly much freer from ash than the other fuels, and its freedom from flame brings about the result that it is free from the tendency to produce soot and smoke. By using anthracite one avoids very largely the necessity for sweeping all chimneys two or three times a year, and one gets at the same time greater freedom from dust, ashes, and clinker than when coke is used.

Thus, though anthracite is not nominally better, indeed in many cases it is not so good as smoke-producing coal from the theoretical point of view, in practice it is very much better. It is, however, difficult to burn, difficult to ignite, and there is a tendency to split or disintegrate, so that a considerable proportion of it may with careless use be lost in the ashpit. There is little difficulty in burning anthracite in an ordinary fire, especially if it is started with soft coal. It is, however, for some reason which is difficult to understand, much more expensive than the softer kinds of coal. The reason for this is not that it is more expensive to procure, but appears to be because the owners of the anthracite pits think they have got the public by the throat, having a monopoly of this class of fuel, and hold up the price artificially. The Government ought to settle this question with the anthracite profiteers. Nevertheless, in my judgment, anthracite at £3 a ton is as valuable as coal at 45s. a ton. In fact, the prices to-day do not vary by anything like so much as this, because the anthracite dealers have in the past stuck on the price so much that people now will not look at it, and in consequence all the anthracite pits are half idle, and this is a very serious matter in these critical days. It is another of the many examples of the results of Government weakness in not handling all these questions firmly.

There are special features of anthracite which make it peculiarly suitable for burning in closed stoves. These are very much more economical than open fires for reasons which will be explained in the next articles. Suffice it to say at present that an anthracite closed fire can be maintained day and night for about three-quarters of the cost which is necessary to maintain an open fire during the day only. Nobody would be so foolish as to say that an anthracite stove was as comfortable a method of heating as an open fire. It is not, but it is incomparably cheaper, and incomparably more efficient as a warming agent. It is a mistake, however, to assume that the warming of a room is the only thing to be considered. It is just as important to make a room cheerful as it is to make it warm. However, these points will be discussed more in detail in the next article.

COAL DUST.

One word more in regard to the use of coal dust. Coal dust may be made to play a very important part in household economy in one or two ways. Either by using it to damp down fires in a manner which I shall explain in the next article when I demonstrate how a fire may be built up to last for a long time.

The other method consists in forming it into briquettes with a bit of binding material, in which case it is almost as useful, and very much cheaper, than coal itself. It is not generally known that a householder can, if he will take the trouble, make extremely useful briquettes out of coal dust by binding it together with some kind of binding material, which can often be bought from the maker along with a briquetting machine.

In my judgment, the Coal Controller ought to have issued some precise information on this point for the guidance of householders, and this has not been done, and a very useful opportunity has been allowed to slip. Great use is made of briquettes on the Continent.

Continued from page 227, October 11.

EXPERIMENTAL DETERMINATION OF THE VALUE OF FUEL.

In order to illustrate the manner in which the value of fuel is determined I have arranged an apparatus, which is a common kind of calorimeter of a simple description for the purpose of determining how many heat units a given sample of coal contains

The method is very straightforward. It consists in weighing out carefully and burning a small quantity of the fuel in a miniature furnace, surrounded on all sides by a weighed quantity of water, and measuring with a thermometer how much the temperature of the water is raised when a given small quantity of the fuel is burnt in a miniature furnace. Great care is, of course, taken to get a representative sample of the fuel by choosing a large number of pieces of the fuel from the bulk, by pounding up these pieces into a powder, thoroughly mixing it up, and then weighing out a very small portion, about two grammes or about two-hundredth part of a pound, and placing it very carefully in a platinum crucible.

This fuel is then ignited by a spark, and rapidly inserted into a vessel of water. Oxygen is then blown on to it from a cylinder

You will see the effect is to produce a violent and complete combustion of the coal, and nothing but powdered ash is left. All the heat produced is forced to bubble through the water, which extracts all the heat from it, and is thereby raised in temperature by a number of degrees measured with the thermometer. It is then an easy matter by simple calculation to determine how many egg-cups full of luke-warm water it corresponds to, that is how much heat would be given off by the complete combustion of a pound of the fuel, and that is the figure which is called the "calorific value."

By similar methods we can find the calorific value of gas. We burn a measured quantity of gas in the calorimeter, and see how much it raises the temperature of a weighed quantity of water.

LIGHTING BY GAS AND ELECTRICITY.

In order to understand the amount of electricity used for lighting let us look at it in this way. We have seen that a unit of electricity is equal to 3,410 heat units. One unit of electricity, in the language of the electrician, consists of 1,000 "watt-hours." We need not confuse ourselves with thinking what that means, but let us call a "watt hour" a little unit. It is one thousandth part of a big unit, and it is equal to three and a half heat units or a wineglassful of luke-warm water.

The Board of Trade unit we buy and for which we pay 8d. in these days is a "big unit." That big unit contains 1,000 small units.

Now the number of these small units which are used every hour that a lamp is burning is in all cases etched upon the electric globe. If you take any electric globe out of its holder and examine it carefully you will see figures, say, for example, 200 V. 40 W. That means that the lamp is constructed for a voltage of 200 volts, which is the electrical pressure. You must not use it for more than 200 volts or it will destroy the lamp, and the 40 W. means that it uses every hour 40 of what we have called "little units."

To determine the number of hours that one big unit will supply a particular light, you have to divide the number of little units into 1,000. Thus in this case 40 divided into 1,000 gives us 25, showing that one unit will last a "40 watt" lamp for 25 hours continuously on end.

At 8d a unit the cost of that light is about one-third of a penny per hour.

If you want to save light, get a lamp for the same voltage and a smaller number of "watts," that is, a lamp which will use a smaller number of little units per hour. Thus one electrical unit will last longer in a small lamp than it does in a big one.

Lamps are now made of all powers, from 10 or 15 little units upwards. Another very good way of reducing the consumption of electricity if you do not want a brilliant light is to use in your lamp-holder a lamp of a much higher voltage than the volts that you actually have on the mains. If, for instance, you have a small passage in which you want to keep a small glimmer of light continuously burning, and your house is equipped with a transformer which gives a voltage of 50, if you use on that system a lamp suitable for 100 volts, you are only using a quarter of the power that you would consume if you used a lamp of 50 volts. That is about the easiest way of reducing your power, but it is naturally only available where you want only a very small and dim light.

Now for such purposes as a night light you can use on a 50 volt circuit a lamp designed for 200 volts, which gives you a little feeble glow, which is quite enough for a night light, and probably at about one-twentieth part of the cost of a night light.

In comparing gas and electricity for lighting purposes I am not going into the perennial controversy as to which is the better or more desirable. Every person follows his own taste in these matters irrespective of any other opinion; or, perhaps, it would be more correct to say, that every person uses in his house the system with which the house is already equipped. It is not often that we have the choice of which we will have. Both are cheap enough. Gas is cheaper, but electricity incomparably more convenient and safer. At present prices gas is 2½ times cheaper than electricity for continuous lighting.

In the winter gas has a considerable advantage in that it warms the room more than does electric light. I am not one of those fanatics who believe that the products of combustion given off by the combustion of a moderate amount of gas do any harm whatever to anybody except consumptive persons. The products are water vapour and carbon dioxide with a very minute trace of sulphur, so minute that it does not matter with well made gas.

Now with both these sources of illumination the chief thing to look at is that the apparatus is in good order. It is no economy to go on working with a broken gas mantle. Neither is it any economy to go on working with an electric bulb which is all black on the inside or all dirty on the outside. Have your bulbs clean and clear. Dust them constantly and discard the bulbs as soon as they show signs of wear, and buy some new ones.

Have them as small as you can do with conveniently, but have them in good order. The best plan is to engrave with a steel point on the brass socket of the bulb the date on which you begin to use it. You then get some idea of which are good bulbs and which are not.

Economy is a mere matter of commonsense, but attention should be drawn to the fact that the amount of light used considered as fuel is so minute that it might almost be left out of account in any scheme of fuel economy. Economise light by all means to save your own pocket, but with all your economies it will not have any considerable effect on your fuel allowance. In fuel saving attention should be devoted to the things that really matter and not wasted on such minute trifles as the amount of gas light or electric light you use.

So far as cost goes it is only necessary to see that where a light is burnt constantly it is in first class condition, both as to cleanliness and age. It should not be a bright light in places where brightness is not important, if you want to save money; but it is not economy to spare light and ruin your own eyesight. Eyesight is infinitely more precious than economy in light or fuel, or, indeed than almost any material thing else on earth.

It is often worth while to have an electrician to test the insulation of your electrical system if you have any reason to suspect there is any considerable leakage. That is a thing that one cannot do for oneself. You can test your leakage yourself by comparing your meter reading before and after you have had the house shut up for a week or so, the main cock or switch being left on all the time. It is advisable at the end of every week to take a reading of the electric meter and calculate how many units you are using, and how many little units you ought to have used by calculation from the figures on the lamp, which I have already explained.

Thus, if you have in regular use, let us say, two 40 watt lamps which burn on an average five hours a night seven days a week, and one 20 watt lamp which burns, say, for three hours a night, and one 15 watt lamp which burns for perhaps one hour a night and an electric kettle which is used once a day, you would expect to use in a week a number of "little units" which may be calculated. Your meter may thus be expected to mark up 4·85 big units as your consumption for the week. If your consumption is more than that you ought to investigate the matter.

Similar calculations may be made for gas light. You can ascertain how many cubic feet an hour are used by each of your burners and the corresponding calculations are very simple.

CALCULATION OF ELECTRICAL UNITS USED IN ONE WEEK.

		Little Units.
2-40 watt lamps, 5 hours a day, 7 days a week	$2 \times 40 \times 5 \times 7$ =	2800
1-20 watt lamp, 3 hours a day, 7 days a week	$1 \times 20 \times 3 \times 7$ =	420
1-15 watt lamp, 1 hour a day, 7 days a week	$1 \times 15 \times 1 \times 7$ =	105
Boiling a quart kettle: 1 time a day, 7 days a week, Efficiency 60%	$\frac{450 \times 7}{.60 \times 3.41}$ =	1530
	Total	4850

Cost 4.85 units at 8d. = 3s. 3d.

Coal Controller's equivalent of this:

Regarded as light = 300 cubic feet gas.

Regarded as fuel = { 13.5 lb. coal, 91 cubic feet gas.

Exactly similar calculations may be made in respect of lighting by gas. One can ascertain how much gas per hour a particular burner is constructed for. By multiplying this figure by the number of hours used in a week, one can determine how much one's meter *ought* to read in a week. But this calculation is complicated if cookers and gas fires are used, but, in any case, whatever the character of the apparatus may be the careful housewife ought to satisfy herself of the number of cubic feet of gas per hour which the appliance consumes, and what is its cost.

APPROXIMATE CALCULATIONS OF COST.

For instance, if she realises that a gas fire burns, say, 37½ cubic feet of gas per hour, that corresponds roughly to 2d. an hour. She should know, too, that if she burns a coal fire for the same time having a somewhat similar output of heat, she will have to supply perhaps 2 lbs. of coal per hour to keep it going.

Realising that coal at present day prices is about a penny for 4 lbs., and gas about 20 feet for a penny, it is evident that a gas fire will cost roughly about four times as much as a coal fire of equal intensity to keep going. It is only wealthy persons to whom a little expenditure more or less is of no importance who can afford to dispense with approximate calculations of this kind.

There is nothing particularly scientific about them. They are the same sort of plain commonsense as a careful housewife exercises when she goes out shopping.

It is impossible to deal with any of these matters intelligently except in their quantitative aspects. I feel some contempt for what may be called "science snippets," which consist generally in distorted and misleading statements of scientific facts without any figures, and which are designed to give an uninstructed person the impression that he understands things which, in fact, he cannot understand unless he understands also the figures relating to them. The only true science involves measurement, without which there can be no real physical science of any kind. Without such there can be no understanding of the somewhat difficult problems that we are to deal with. Science of this kind is essentially experimental. There is none which is more experimental than domestic science, and of the many branches of the latter none is more experimental than that of the use of heat.

No person should set up any science whatever in antagonism to intelligent practice. Practice, however, cannot be intelligent unless it takes into account the science in this matter. It therefore, appears desirable to begin by describing very briefly how any intelligent person may make experiments of their own.

The need for this in connection with fuel economy is abundantly obvious. As an example of that need I will ask anyone to ask himself or herself whether they know or have any idea of the following—

(1) The number of cubic feet of gas needed to warm up their own gas oven, for instance, to a cooking temperature.

(2) The temperature that an oven ought to be at when they put a cooking vessel into it.

(3) How much gas it takes to boil their kettle.

(4) How many pounds of coal are needed to get a hot bath.

Scores of similar questions will occur to anyone. I venture to think that in nine cases out of ten an honest reply to these questions would be "I have no idea." Now that is the precise opposite of the scientific attitude of mind towards these matters. It is also the precise opposite of the practical attitude of mind towards them.

If one goes out shopping, say, to buy a blouse, one at least has some idea in one's mind what one expects to pay for a blouse of such and such a quality. One ought to have the same sort of idea of the amount of fuel one expects to pay for when one cooks a dinner. If you have never measured the matter you cannot tell. You just use the fuel as it happens to come, and trust to luck that you have not used too much, if, indeed, you think about the matter at all.

We all know what is the meaning of a ton of coal. I doubt very much whether the great majority of persons have any idea of what a pound of coal looks like when they see it on a shovel, because they have never weighed out a pound of coal. The great majority of persons, I believe, cannot even read their own gas meters.

PRACTICAL EXPERIMENTS ON COST.

I recommend everybody to make a few quantitative experiments in their own homes just to see what fuel is required for the various services exactly as they are accustomed to employ them. For instance, in the case of a coal range, one should weigh out 5 lbs. of coal on the scales, light the fire with some paper, about ¼ lb. of wood, and 5 lbs. of coal, and add whatever coal may be required afterwards in 2 lb. lots, and keep a record of the fuel actually used. In regard to gas, experiments should be made with gas fires and gas heaters to ascertain how much gas is used for each separate purpose. Every piece of gas apparatus in the house must be shut off except that which is being experimented with, which should then be used as in practice, close watch being meanwhile kept on the meter.

READING A METER.

I will just explain a very simple matter—how to read a gas or electricity meter, so that any person may be able to do it for himself. It is really so simple that one is almost ashamed to explain it. The only excuse for doing so is that I have asked about half a dozen people lately whether they can read their meters, and they have told me they cannot. A gas or electric meter is really on the same principle as one of the boards that one sees in a church for announcing the numbers of the hymns. There is a row of figures, which can be altered independently of one another, that is, the first figure may be 5, the next 7, and the next 3, indicating that the number of the hymn is 573, and for the next service the figures may be altered to 746, but instead of being on separate rollers the figures on a meter are in the shape of little round circles, each one being provided with a pointer, and the last two figures being omitted.

Suppose there are five dials. All one has to do to ascertain the number of cubic feet of gas which have gone through the meter since it stood with all the pointers at O, is to read each of the dials in turn in their natural order, and write down the numbers in a row, and add two noughts at the end. Naturally, every pointer must be at one figure or somewhere between two figures. Thus, the hand may be between 5 and 6 in this case. One must always write down the smaller of the two figures for reasons which will be obvious to anyone who thinks about it. Further, instead of writing down two noughts for the last two figures one can estimate what is the percentage distance that the last hand has travelled from the last figure towards the next. Thus if it looks like 45 per cent. of the distance one writes down for the last two figures 45 instead of 00. This is absolutely all there is in this matter.

To be continued.

THE SOCIETY OF ARCHITECTS.

A SPECIAL general meeting of the Society of Architects was held at No. 28, Bedford Square, London, W.C. 1, on the 10th inst.; Mr. A. Alban H. Scott, Senior Vice-President, in the chair.

The following candidates were elected members:—

C. H. Bell, Dundee.
S. E. Castle, London.
2nd Lieut. J. Clack, London.
2nd Lieut. D. B. Price, Ystrad Mynach.
E. D. Dennis, Blackpool.
T. R. Eltringham, Lemington-on-Tyne.
F. Field, Northwich.
Merwanji Framji, Bombay.
R. N. Jackson, Durban.
Lieut. D. R. Lyne, London.
F. Morral Maddox, Stoke-on-Trent.
V. R. Naidu, Deccan.
F. R. Priest, London.
W. Simpson, Birmingham.
Lieut. A. D. Stewart, Edinburgh.
E. B. Verrall, Leeds.
2nd Lieut. G. Warren, London.
J. T. J. Williams, Cardigan.

The following Officers and Members of Council for the year 1918-1919 were declared elected:—

President: E. J. Sadgrove, F.R.I.B.A., London.

Senior Vice-President: A. Alban H. Scott, M.R.San.Inst., London.

Junior Vice-President: E. Partridge, F.S.I., Richmond.

Honorary Secretary: N. D. Sheffield, F.S.I., London.

Honorary Treasurer: G. E. Paine, London.

Honorary Librarian: H. O. Ellis, London.

Members of Council: H. Adams, F.S.I.; G. Baines, F.R.I.B.A.; C. Jackson; Col. Leslie, R.E.; E. Marsland; W. J. Martin; H. Pearson; T. Wallis; A. B. Brown, F.S.I.; H. Freyberg, F.S.I.; F. Hall-Jones, F.S.I.; A. F. H. Trehearne, F.S.I.; P. M. Beaumont, A.M.Inst.C.E.; H. Gill; G. A. Harrison; and A. J. Murgatroyd.

It was reported that upwards of 400 members were serving with the Colours.

Painting in War Time.

Mr. W. J. Lawrance then read the following paper on "Exterior and Interior Painting in War Time":—

There is little need for us to discuss the extent to which the painting industry has been affected by the war. Rotting timbers and rusting steel work are in sufficient evidence to render a clear view of the seriousness of the situation to all those who are in the habit of watching the life of structures, and time will impress the same facts upon others less observant.

But if we have to adopt as inevitable a partially unsatisfied need for preservation of our buildings, we can at least give careful consideration to that amount of interior and exterior painting with which it is still possible to proceed, particularly as regards the selection of material. It is with the object of investigating the possibilities of executing durable work with materials now procurable that this paper is offered. It is not merely a question of new materials against old ones, for some of the materials which are used almost universally to-day for certain purposes have been obtainable for years, but have been persistently rejected by some painters through sheer prejudice, whilst others equally old, not procurable to-day, were adhered to because their use was traditional.

Perhaps the redeeming feature of the serious position now facing us is that it carries us back to rock-bottom principles underlying the technique of painting, and forces us to consider materials in the light of their technical value rather than their traditional use. In order to examine the materials at our disposal from this standpoint, it is necessary first to briefly define those principles, and I quote from some of my notes on the subject that have already been published.

II.—NOTES ON THE FUNCTIONS FULFILLED BY THE INGREDIENTS OF PAINT UNDER THE FOUR HEADINGS, VIZ., PIGMENT, BINDER, THINNER, DRIER.

(1) PIGMENT.—Mainly useful as a colouring agent, but also acts to some extent as a filler in combination with the binder. Some pigments, such as red lead, combine chemically with the oil to form a kind of varnish with good protective powers.

(2) THE BINDER (generally oil) is used to hold the particles of pigment together, and also helps to secure a smooth protective coat. The binder is also a filling agent on porous surfaces, the oil entering the pores of the surface while in the fluid state, and then oxidising to a leather-like substance (see driers) and thereby stopping suction. The quantity of oil also regulates the gloss.

(3) THE THINNER is added with a view to rendering the paint more fluid in consistency, making it more workable and more penetrative into absorbent surfaces. Turpentine used in paint for priming woodwork has the effect of slightly dissolving some of the natural resin in the wood, thereby bringing about a secure attachment between the paint and the wood, but it should not be used in excess at the expense of the filling properties of the paint. Spirit acts indirectly as a drier, because it allows the oil to be spread over a larger area *i.e.*, exposes it to a larger amount of oxygen and, therefore, hastens the drying.

(4) THE DRIER.—Linseed oil is said to dry when it becomes oxidized. By combining with oxygen it undergoes a chemical and physical change, a leather-like solid taking the place of the liquid. This action does not stop as soon as the paint feels dry, but goes on for a great length of time, until the paint perishes. Therefore, it will be clear that the longer the paint takes to dry the longer it is likely to last. Driers are added to paint to assist the oil in drying, so that the surface will be hard in a reasonable time, but it will be seen from the above remarks that an excess of drier is very undesirable and will cause early perishing or cracking. An excess of drier often delays hardening, because the surface of the paint dries so quickly that it forms an impervious layer that effectually prevents the paint immediately under this skin from drying, as it cuts off the supply of oxygen. The oil in this undried paint subsequently sweats through to the surface and causes re-softening; moreover, the top skin being harder than the paint underneath will crack when the soft paint begins to move under the influences of expansion and contraction, caused by varying weather conditions.

VI.—GENERAL NOTES ON DRIERS.

It is necessary to reduce the common drying agents, as they are so strong in their native state that the quantity could not be easily gauged if used full strength. Reduction in this way cannot be called adulteration, unless the drier is extended unnecessarily.

The methods of reducing are as follows:—

PATENT DRIERS—with barytes, whiting, &c., and ground in oil.

TEREBINE—with spirit and a little oil. (In this case the drier is held in suspension by the addition of resin or other resinous matter.)

LIQUID OIL DRIER—with oil and a little spirit, also usually a small quantity of resinous matter.

POWDER DRIERS—with fine pigments such as zinc oxide.

The following notes indicate the merits of the different methods:—

PATENT DRIERS.—In order that this drier can be added to dark colours as well as white, it is necessary that the reducing agents shall have little body or opacity; this, of course, reduces the opacity of the paint, and, unfortunately, the pigments that are generally used (as above) are often detrimental to the durability of the paint. Another drawback to patent drier is that it is not a standard article. It should be noted that in come cases there is a quantity of undissolved drying agent in suspension, and drying action is delayed until this dissolves in the added oil (when the paint is mixed up), when drying proceeds more rapidly. In consequence, an apparently slow drying paint often hardens rapidly afterwards, and even becomes too hard. From this it follows that paint mixed some time before use will generally give more uniform drying results. Patent drier often discolours on drying and carries this discolouration to the paint, proportional to the amount used.

TEREBINE.—The evaporation of such a large quantity of spirit, leaving behind chiefly resinous matter, is very apt to cause cracking by shrinkage and, therefore, this class of driers should be used sparingly. It is more suitable for paints for ironwork than for wood work.

LIQUID OIL DRIERS.—It will be seen that the reducing agent here is the least detrimental because the evaporation of the small quantity of spirit is counterbalanced by the expansion of the oil, which is the chief extender; moreover, the oil possesses elasticity and protecting power. The drying action is very uniform, and the drier is standardized, inasmuch as manufacturers usually keep to one formula, and when a good make is obtained and used regularly, the painter can always depend on equal results. Liquid driers are particularly suitable for zinc paints.

NOTE.—Chemical combinations of the drying agents with resinous matter or oil, are generally used in terebine and liquid driers, because they are more soluble in this form, but terebine usually contains added resinous matter also.

POWDER DRIERS.—It is against good principles to add powder to paint, as absorption of oil by the pigment is likely to occur after the paint is applied, causing the paint to go flat. Drying is not uniform, as it is difficult to get perfect mixture without grinding.

GOLD SIZE.—This is sometimes used as a drier, especially for flat paints, as it is a good binder. It is really a quick drying varnish. An excess of gold size will cause cracking, especially if used over oily coats.

VIII.—NOTES ON THE PRINCIPLES OF PAINTING.

I. PRIMING.

We have already considered the ingredients of paint; it is now necessary to investigate their uses in paint.

The functions of a priming paint vary according to the material undergoing treatment, but they may be broadly set out as follows:—

(1) ON ABSORBENT SURFACES—Wood, plaster, &c.) To stop suction and fill up the pores of the surface with a tenacious material to which subsequent coats will adhere firmly.

(2) ON SURFACES LIABLE TO CORROSION.—(Iron, &c.) To form a coat which is practically impervious to the corroding agent (water or other fluids), and also, if possible, to prevent corrosion by neutralising the corrosive substances. In cases where little or no suction is likely to take place (on zinc, for instance), the paint must also be of an adhesive nature.

(3) ON NON-ABSORBENT AND NON-CORRODING MATERIALS.—(Glass, &c.) To form a foundation which will adhere firmly to the surface, the adhesiveness of the paint itself being depended upon for this purpose. Also to leave a ground to which subsequent coats will adhere.

(4) ON SURFACES THAT HAVE TO WITHSTAND HEAT.—(Radiators, baths, &c.) To form a covering consistent with clauses 2 and 3, but with materials that will not soften under the influence of heat.

A paint for any surface must present sufficient elasticity to enable it to expand and contract with the material to which it is applied.

It will be seen from the above notes that absorbent surfaces under normal conditions present the most satisfactory grounds for painting on, as the paint becomes dovetailed as it were into the surface, and is not entirely dependent on surface adhesion.

Generally, surfaces presenting great absorption should be primed with paint containing a large proportion of oil, because oil has good

filling properties; moreover it may be rounder than for materials offering less suction. The latter should have turps or spirit added, and can be thinner to aid penetration. When the suction is not sufficient to allow the paint to enter the surface, treatment under heading 3 is preferable, *i.e.*, the use of an adhesive paint. Paints which are depended on for secure attachment without the aid of suction, are usually based on a varnish or boiled oil vehicle, these being more adhesive than raw linseed oil. When a surface contains a substance that is soluble in spirit (*e.g.*, resin in wood), a portion of that spirit added to the paint will often give an extra hold.

The pigment in priming acts in several ways, viz., (1) as a filler, (2) combines with the vehicle to form an impervious layer, (3) acts as a colouring agent, thus assisting in the final obliteration of the surface, (4) in some cases assists in preventing corrosion by neutralising corroding agents.

The Priming is the most important Coat, as it is the Foundation Coat.

XIII.—NOTES ON RE-PAINTING PREVIOUSLY PAINTED WORK.

Work should be first examined to ascertain whether the old paint will make a worthy foundation for the new.

(a) If the old work is badly cracked or blistered the paint should be removed. This can be accomplished in three ways. 1. Burning off. 2. Caustic paint remover. 3. Spirit paint remover.

(e) Whenever paint is removed it is advisable to use a greater proportion of turps in the priming coat than for new work of the same kind.

(f) Attempts to fill up badly cracked work with filling are not always satisfactory, as the cause of the cracking is not removed, and the cracks will often develop further after repainting.

(g) Attempts to scrape off blisters, fill up and re-paint, are rarely successful, as the new paint often causes the old (which has not properly adhered to the surface) to blister up in fresh places.

(h) Where work is sound or only slightly cracked on surface, it should be first washed and then rubbed down well with pumice stone and water.

(i) If work after preparation presents a tacky surface, a thin coat of flatting will render a perfectly hard ground.

(j) If knots show through the work, the paint should be scraped away *to the wood* in these places, the knots re-coated with patent knotting and the surface filled up level again. Knotting *over* the old paint is useless, as cracking is apt to occur wherever knotting is applied over paint. (See XI (1).)

(k) Painting should always precede stopping and holes should be well painted.

(l) Paint thinned with half oil and half turps would be suitable for average surfaces after preparation.

XIV.—GENERAL RULES FOR THE SEQUENCE OF COATS IN PAINTING.

(1) A quick, hard drying paint or varnish (or knotting) should never be applied over a very oily one, because the hard film of paint is not sufficiently elastic to give to the movements of the oily undercoat (caused by the expansion and contraction of the latter). Oily coats over hard ones are not open to the same objection.

The priming coat over an absorbent surface need not be regarded as a very elastic one, as it enters the surface, which holds it firmly.

(2) Size should not be applied over oil paint, not only for reasons stated above, but also because size has a contractile tendency and cracks itself. Being strongly adhesive it will also tear the undercoats apart to conform to its own movements. For this reason, care should be taken when sizing walls or hanging paper not to allow any size or paste to become permanently attached to any of the painted work. Unless washed off again, it is likely to crack the painted work through to the wood.

(3) Paints containing an excess of terebine or gold size must be looked on as having contractile qualities, and may crack in themselves, but are certain to do so if applied over a very oily paint.

(4) One coat of paint should never be covered with another coat of paint or varnish until thoroughly hard, because the top coat will prevent further hardening of the undercoat, which will consequently remain too elastic for agreement with the final coat, hardened by its permanent contact with the air; cracking will result.

(5) Paint should be brushed out well and evenly to a thin film, otherwise the surface may become dry and exclude the air from the paint just under the dry film, with the result that the paint may become permanently tacky. This may occur in patches if the paint is not applied evenly.

(6) Each coat of paint should be lightly glass-papered to remove specks of dust, &c., before applying the next coat.

(7) The respective coats of paint should have an excess of oil and turps alternately (but not carried to extremes). This facilitates application, and the coats are made sufficiently equal in elasticity to prevent cracking (but see "Flatting.")

(8) Some painters employ the method of applying all the intermediate coats from one mixing, made from about half oil and half turps, but such coats are not so cohesive as the corresponding coats of the foregoing method (7) and the application is more difficult.

(*To be continued.*)

PARTY FENCE WALLS.

THE case Darnell *v.* Power, reported in our "Law Reports" on August 2, tried by Judge Cluer in the County Court, raised a point of some importance to tenants of adjoining properties.

The plaintiff was the assignee of a lease dated May 31, 1870, whilst the defendant occupied the adjoining premises under a lease dated February 7, 1894. A wall divided the two premises, and each tenant was under obligation to his landlord under the leases to keep the wall in repair. It would appear that the landlords were not the same; but this is not absolutely clear, and it does not seem material.

The wall was badly out of repair, and was alleged by the plaintiff to be dangerous, and he desired to rebuild it. On September 13, 1917, he had written to the defendant, saying he was rebuilding the wall, and asking him to bear half the cost, but the defendant replied that he could not recognise any liability in the matter as the plaintiff was doing it for his own convenience. Subsequently the defendant wrote complaining of trespass on his property and saying no notice had been given to him before the work had been commenced.

The wall having been repaired or reconstructed, the plaintiff brought this action against the defendant to recover half the cost, £26 5s.

The plaintiff appears to have based his claim on an alleged common law right and not under the London Building Act at all; but he further contended, if the case did come under the Building Act, the work was done because the wall was dangerous, and in that case no notice is essential to the Council as an absolute obligation.

The learned Judge gave judgment for the defendant, and he very tersely stated the reasons for his judgment as follows:—"How can I, being under an obligation to my landlord to repair a wall, sue a third party who is under an obligation to his landlord?" In other words there was no privity between the parties. The case must, however, be very usual where two adjoining tenants are under obligation to their respective landlords to repair a common boundary wall dividing the two properties and yet, as in the present case, they are not tenants in common, and therefore it may be useful to consider what is their position and what course they should adopt.

No case was cited to the learned Judge which could support the plaintiff's contention. The plaintiff's counsel relied on Leigh *v.* Dickinson (15 Q.B.D. 60), but that was a case of tenants in common, where different principles apply. There seems no reason to question the correctness of the decision in this case that no remedy in contract was available by the plaintiff, and the question of tort did not arise, but in any event it would seem doubtful whether, even if there were any remedy at common law, it was available to the plaintiff, for there is authority to show that where the Building Act is in force and applies, the rights of parties are governed by that Act. Thus, in Lewis & Salone *v.* Charing Cross, Euston and Hampstead Railway (1906, 1 Ch. 508), Mr. Justice Warrington (as he then was) thus interpreted the case, Standard Bank of British South America *v.* Stokes (9 Ch. Div. 68):—"In my judgment the result of that decision is this, that whatever at common law may be right of an adjoining owner in relation to a party structure, his rights in relation to a party structure within the area comprised by the Building Act depend upon that Act. He has the rights which that Act gives him, and no others." See also Selby *v.* Whitbread & Co. (1917, 1 K.B. 736, at p. 72), in which case the above decisions were followed, and where the distinction between the common law right and an action in tort for damages is explained. If that is the case, parties in the position of the plaintiff in this case must see what remedies are open to them under the Act and proceed accordingly.

It seems clear that whether this wall was dangerous or not the plaintiff intended to exercise a right over it conferred by section 88 (1) in Part VIII, to repair or rebuild it, and the so-to-speak emergency provisions of the Act as to dangerous structures were not put in force and did not come into play. The wall was not in such a dangerous condition that there was not time to give the notices required by section 90, and the aid of the public authority was not invoked. That being the case it was open to the plaintiff to proceed in accordance with the other provisions of the Act, in part VI I which provides for the apportionment of the expenses of repair between the building owner and the adjoining owner.

If the proceedings are taken under Part IX, the structure having been pronounced dangerous by the public authority, it would appear that more difficult questions might arise, since, under section 106, the Council may serve the notice to repair either upon the owner or occupier, and under the Metropolitan Building Act it was held, in Debenham *v.* Metropolitan Board of Works (6 Q.B.D. 112), that other owners liable to contribute could not be summoned, in order that the expenses might be apportioned between them, and there seems to be no different procedure under the Building Act. This point did not arise in the case we are considering, and we should prefer to express no opinion upon it, but it is possible that if one occupier were thus compelled, under the Act, to repair a structure for which either the owner was responsible or some other party was liable to contribute, then an action might be brought against the party liable on the ground that the person who had paid the expenses had done so under compulsion of law; but we have not before us any decision on this point.

Architectural Craftsmen.

At a meeting of the Architectural Craftsmen's Society, held in the Societies' Room in the Royal Technical College, Glasgow, on October 11, Mr. David Skinner, President, in the chair, Professor Charles Gourlay delivered an illustrated lecture, entitled "Gleanings from the English Cathedrals." The Professor restricted the scope of his lecture to some of the cathedrals he had visited. He compared the design of one cathedral with another, dealing with their situations, external and internal designs, and finally their screens, stalls, wall arcades and monumental tombs.

THE BUILDING TRADE.

THE INDUSTRIAL COUNCIL FOR THE BUILDING INDUSTRY.—III.

THE provision of a graduated scale of minimum rates, designed to maintain *real* wages as nearly as possible on a level throughout the country, is also an item of the programme laid out for the Industrial Council for the Building Industry.

Prior to the war there was a wide divergence between the rates of wages and hours of labour worked in identical handicrafts in different areas. There was a difference of nearly 100 per cent. between the lowest rate and the highest, and between those limits there was a series of intermediate rates, varying without any apparent reason from district to district; but as in general the lowest rates were to be found in country districts and the higher in populous centres, it would appear that probably the low wages paid in the chief industry of country districts, viz., agriculture, set the mark for the building trade workmen in those districts, and that similarly the higher rates paid to the leading industries in industrial centres similarly influenced those applicable to the building trade.

There was also statistical information, showing that the cost of living varied substantially in different parts of the country, being in general cheapest in Lancashire, Yorkshire and the Midlands, and dearest in the South of England, and yet wages were relatively lower in the latter district than they were in the former ones. When the rise in the cost of living made itself felt the workpeople made that the main ground of applications for increases in wages. The advance at first was not quite general, but later became so, and during the last year or two it has been apparent that there is little difference in the cost of living as between one place and another in this country. An investigatfon is being made which will bring out the actual facts; but the increases have been so abnormal and the labour situation is so unusual that a great levelling-up of the rates of wages is rapidly taking place throughout the building trades.

The task of the Industrial Council may be to some extent lightened by what is taking place, but that which circumstances have brought about circumstances may alter again, so that there is room for the Council, after consideration of the question, to recommend the adoption of certain principles for the guidance of those who give decisions in such matters.

It seems to be generally accepted now that an industry ought to provide its workpeople with a fair living wage as a minimum. That means that the standard minimum wage should be based upon the cost of living. But there are various standards of living also, and as each class of workman aims at at least maintaining the standard of life to which he has been accustomed, a fair living wage according to the accustomed standard of life of the recipient is what ought to be taken as the point of departure. Such a wage would only vary with the cost of living, and it might be agreed that before any change should be made a variation of some substantial percentage should be officially recorded.

There would be a further possible source of variation as between large industrial centres and country districts, in so far as it may be shown that it costs less to live in the latter than it does in the former, or as it may be cheaper to live in the North than in the South, or *vice versa*.

There is, however, a disturbing factor, due to the fluctuations of trade, whereby some districts become very busy while others remain stagnant.

It is only to be expected that the workpeople desire to share in the more profitable trade when it occurs, and so there are demands based upon the state of trade which send wages up in certain districts.

In the past advances of that kind have often proved permanent, although the state of trade has changed for the worse, but it may be different in the future: if wages are to be automatically fixed in relation to cost of living as well as vary in relation to supply and demand, employers will be apt to consider that they should vary downwards as well as upwards. There need not be any great difficulty about that if the Industrial Council can suggest a suitable method of insuring that the changes, up or down, shall be gradual, but respond promptly to variations of the circumstances.

Supposing it was agreed that—

(*a*) The weekly earnings of any workman working full time in any branch handicraft should bear a uniform ratio to the cost of living of his district in whatever part of the country that district might be.

(*b*) That a variation of any agreed percentage in the cost of living, either way, should involve an adjustment of the rate of wages, either way, from time to time.

(*c*) That an increase in the number of men of any given handicraft employed in any district over a certain normal number fixed as a datum line should involve an advance of an agreed amount per hour in the rate of wages whenever the increase of the number of men exceeded an agreed percentage, and conversely should involve a similar decrease when the number employed receded again to the normal.

(*d*) That there should be provision of machinery capable of ascertaining the facts and fixing the necessary adjustments at reasonably short intervals, say, not less than four months.

It would seem that the desideratum preconceived by the Council would be attained and that wages would become automatically adjusted with the least possible friction so long as the workpeople concerned were satisfied to maintain the standard of life to which they were accustomed.

Should they desire to raise their standard of life, provision ought to be made for dealing also with that contingency—at all events to the extent necessary to leave them the right to express their desire and to press for it without involving them in a breach of the agreement which has been supposed as accepted in the remarks that have preceded.

The principle upon which one might proceed in regard to raising the standard of life may be suggested by the following considerations.

A man who is not satisfied with the standard of living obtainable from his salary as a wage-earner may decide to become an employer, in which case he will have to depend for his standard of life upon the success of his efforts to secure plenty of work and to carry it out with satisfaction to his clients and profit to himself.

As his business grows, provided it continues profitable, his income increases and he may improve his standard of living accordingly if he likes. In short, his standard of living depends upon the energetic way in which he pursues and carries on his business; it is the result of successful effort over and above the effort he would have to make if he worked at his trade as a handicraftsman only.

But there is not room for every handicraftsman to become an employer, so that to enable workpeople to raise their standard of living opportunity should be afforded to them, and sought for by their organisations, on their behalf, to obtain special remuneration for extra effort, just as the employer does, and this can easiest be done by some understanding between organisations of operatives and employers which shall provide a proper reward for extra effort on the part of workmen.

That employers would willingly consider any practicable proposals may be taken as certain, since increase of output is the way to increased business for them. But when it comes to a question of what would be a proper reward for extra effort on the part of the workmen it may be difficult to get on common ground.

Supposing that, owing to such extra effort, a saving of £500 would be made upon the estimated, or usual, cost of executing a certain contract, how much of that saving ought to go to the workmen and how much to the employer?

There is a school of thought among the former which maintains that it should all go to the workmen, as being the direct result of their effort; if that were so, then the only advantage accruing to the employer by the arrangement is that he gets his contract completed more quickly, and if the system was applied with similar results to all his contracts he would be able to turn his capital over faster, and so do a greater aggregate business for the year. If his average net profit every time he turns over his capital is 2 per cent. thereon, and he is able under the present system to turn it over four times a year, his total net profit is 8 per cent. per annum; but if under the new system he could turn it over five times a year, his net yield would be 10 per cent.

It does not, however, appear quite fair to the employer to say that the whole of the £500 saved in the example given is due to the direct effort of the workmen, because the workmen require to be supplied with material more speedily to enable them to get the work out more quickly; the total amount of capital required to pay the labour cost of the work has to be supplied in a shorter time; and the strain on the employer and his managing staff is intensified by the quickening of the whole processes of output. All these things involve cost of one kind or another to the employer, they are his contribution towards the effort required to save £500. Finally, it is the organising ability of the employer and his business acumen and activity which have provided the workmen with the opportunity to participate in the effort to effect that saving.

If these considerations are given fair weight to it would seem just that the employer should participate to some extent in the £500 saved. Whatever basis of remuneration to workpeople for extra effort be adopted, it is essential that it should be such as to give immediate results, if possible week by week, certainly not less frequently than job by job. It should be independent of whether the employer is making a profit on his transactions or not.

The simple and direct way here suggested admits of those considerations being fulfilled, especially the last-named, because however much an employer might be losing upon his contracts, it could only help to diminish his losses if by extra efforts any substantial saving in labour cost could be made.

NOTES FROM THE FOREIGN PRESS.

CURVED KERB-STONES IN RE-INFORCED CONCRETE.

In an issue of *Beton und Eisen* reference is made to curved kerb-stones at a street-crossing which are subjected to severe friction from the wheels of heavy vehicles, whereby they are quickly worn away. Frequent renewals disturb and break up the set material of the footway, especially where the materials are asphalt. To avoid this, it is proposed to make the curved corner-stone of reinforced concrete. The experiment has been made in Munich, with good results. A cast-iron skeleton is partly enclosed in the concrete, making a curved block one metre in length, with an iron face towards the traffic. Several illustrations show the form of skeleton and the finished block. The first cost is greater than that of granite and harder kinds of stone; but the duration of the block is much longer. The concrete mixture consists of one part of Portland cement and three parts of sharp sand.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Accrington	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Altrincham	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1§	1/1§
Ashton-under-Lyne	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1½§	1/1½§
Barnsley	1/3§	1/2	1/1½§	1/-	1/1½§	1/1	11	11	11	11
Barrow-in-Furness	1/3½	1/4	1/4	1/3½	1/3½	1/3½	1/3½	1/1	1/1	1/1
Barry	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Bath	1/1	1/1	1/1	1/0½	10/½	1/1	1/-	10½	10½	10½
Bedford	1/1	1/1	1/1	1/1	1/1	1/1	10	10	10	10
Birkenhead	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1 2½§	1/2½§
Birmingham	1/4	1/4	1/4	1/4	1/3½	1/4	1/3§	1/1	1/1	1/1
Bishop Auckland	1/2½	1/2½	1/4	1/2½	1/2½	1½	11	11	11	11
Blackburn	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Blackpool	1/-	1/2	1/2	10½	8½	1/-	10½	8	8	8
Bolton	1/5§	1/5§	1/5§	1/4§	1/3½	1/6§	1/5§	1/-§	1/-§	1/1§
Bournemouth	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Bradford	1/3½	1/3½	1/3	1/2½	1/2½	1/3	1/1	1/1	1/1	1/1
Bridgwater	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Brighton	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11	11	11
Bristol	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Burnley	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/3½§	1/-§	1/-§	1/-§
Burton-on-Trent	1/1	1/1	1/1	1/1	1/1	1/1	1/0½	10½	10½	10½
Bury	1/5§	1/5§	1/5§	1/3	1/3½§	1/6§	1/5§	1/-§	1/0½§	1/0½§
Cambridge	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	10½	10½	10½
Cardiff	1/3	1/3	1/3	1/3	1/3	1/3½	1/2	1/-	1/-	1/-
Chatham	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Chelmsford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11	11	11	11
Cheltenham	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	1/1½	10½	10½	10½
Chester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2§	1/-§	1/-§	1/-§
Chesterfield	1/-	1/2	1/1	11	10	11	1/-	8-8½	8-8½	8-8½
Colchester	11	11½	11½	1/-	11	1/-	9½	9½	8½	8½
Coventry	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/0½	1/0½	1/1
Crewe	1/3½	1/0½	1/0½	1/0½	1/0½	1/2	1/0½	8	8	8
Darlington	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/0½	1/0½	1/0½
Derby	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11½
Doncaster	1/-	1/1	1/1	10½	10½	10	9½	10½	10½	10½
Dudley	1/2	1/2	1/2	1/2	1/2	1/3	1/1	11	11	11½
Durham	1/2	1/2	1/1½	1/2	1/1½	1/10	1/0½	9	9	9
East Glam. and Mon. Valleys	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Exeter	1/-	1/-	1/-	1/-	1/-	1/0½	11	10	10	10
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/-½	1/-½	1/-½
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Guildford	1/1	1/-	1/-	1/1	—	1/1	11½	9½	9½	10
Halifax	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1	11½	11½	11½
Harrogate	1/0½	1/0½	1/-	1/-	1/-	1/2	1/-	10	10	10
Hartlepools	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Hastings	10	10	10	10	10	10	9	7½	7½	7½
Hereford	11½	11½	11½	11½	11½	11½	10½	9½	9½	9½
Huddersfield	1/3½	1/3½	1/5§	1/1	1/1	1/2	11	11½	11½	11½
Hull	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/3½	1/2§	1/2§	1/2§
Ipswich	1/1½	1/1½	1/1½	1/2	1/2	1/2½	1/0	11	11	11
Lancaster	1/1½	1/1½	1/2	1/1½	1/1½	1/-	1/1½	11	11	11
Leamington Spa	11½	11½	11½	11½	11½	11½	10½	8½	8½	8½
Leeds	1/3½	1/3½	1/3	1/3	1/3½	1/3	1/0½	1/0½	1/0½	1/1
Leicester	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	1/-
Lincoln	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10	10½
Liverpool	1/6§	1/6§	1/5§	1/6§	1/6§	1/6§	1/6§	1/2½§	1/2½§	1/2½§
Llanelly	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
London	1/5	1/5	1/5	1/5	—	1/5½	1/2½	1/1½	1/1½	1/1½
Loughborough	1/3½§	1/2½§	1/1½§	1/3½§	1/3½§	1/1½§	11§	1/0½§	11½§	1/0½§
Luton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	11	11	11
Maidstone	11	11	1/1	10	10	11	1/-	10	10	10
Manchester	1/5§	1/5§	1/5§	1/5§	1/4§	1/6§	1/5§	1/1§	1/1½§	1/1½§
Mansfield	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½
Merthyr Tydfil	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Middlesbrough	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Newcastle-on-Tyne	1/3½	1/3½	1/3½	1/3½	1/2	1/3	1/4§	1/0½	1/0½	1/0½
Newport, Mon.	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Northampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Norwich	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3½	1/1	1/0½	1/0½	1/0½
Oldham	1/5	1/5	1/5§	1/5§	1/4	1/4	1/5§	1/1½§	1/1½§	1/2§
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	1/2	1/2	1/2	1/2	1/2	1/2	1/1½¶	1/-	11	11
Pontypridd	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Portsmouth	1/-	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½
Preston	1/4½	1/4½	1/4	1/3½	1/3	1/3½	1/2½	1/0½	10½	1/0½
Reading	1/1	1/1	1/1	1/1½	1/2	1/1	11½	11	10½	10½
Rochdale	1/5§	1/5§	1/5§	1/4½§	1/3	1/6§	1/5§	1/1½§	1/1½§	1/2§
Rochester	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Rugby	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	11½
St. Albans	1/-	1/-	1/2	1/-	1/-	1/-	10½	9	9	9
St. Helen's	1/6	1/6	1/6	1/6	1/6	1/5	1/3	11½	11½	11½
Scarborough	1/1	1/1	1/1	1/1	1/1	1/-	11½	10	10	10
Sheffield	1/3½	1/3½	1/3½	1/3	1/3	—	1/1½	1/0½	1/0½	1/0½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	1/4	1/3½	1/5	1/4	1/4	1/4	1/4	1/-	1/-	1/-
South Shields	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	1/4§	1/0½	1/0½	1/0½
Stockport	1/5§	1/5§	1/5§	1/4§	1/4½§	1/6§	1/5§	1/1	1/1	1/1
Stockton-on-Tees	1/3½	1/3½	1/3½	1/3½	1/2	1/3½	1/3	1/0½	1/0½	1/0½
Stoke-on-Trent	1/0½	1/0½	1/0½	1/0½	1/0½	1/-	11½	10	10	10
Stroud	11½	11½	11½	11½	11½	11½	11	9½	9½	9½
Sunderland	1/3½	1/3½	1/3½	1/3½	1/2	1/1½	1/4§	1/0½	1/0½	1/0½
Swansea	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	1/-
Taunton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	11§	9½§	9½§	9½§
Torquay	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Wakefield	1/2½§	1/3§	1/2½§	1/2½§	1/2½§	1/2½§	1/1½§	10½	10½	10½
Walsall	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11½	11½	11½
Warrington	1/5§	1/5§	1/5§	1/5§	1/5§	1/5§	1/4§	1/1½§	1/1½§	1/2§
West Bromwich	1/3½	1/3½	1/3½	1/4	1/3½	1/3	1/1½	1/0½	1/0½	1/0½
Wigan	1/4§	1/4§	1/4§	1/4§	1/3§	1/4§	1/5§	1/0½§	1/0½§	1/0½§
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11
Worcester	1/-	1/-	1/-	1/-	1/-	1/-	10	10½	10½	10½
York	1/2§	1/2§	1/2§	1/2§	1/-	1/-	10	11½§	11½§	11½§

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include all 12½ per cent. bonuses. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. increase granted by the Committee of Production to workers engaged on munition work.—ED.]

Competitions, Contracts, &c.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

BUILDING AND PAINTING.

OCTOBER 28.—**Nottingham.**—PAINTING, &C.—The Board of Guardians invite tenders for internal cleaning and painting at the military hospital, Bagthorpe. Specifications of Mr. E. R. Sutton, F.R.I.B.A., Albion Chambers, King-street, Nottingham.

NOVEMBER 13.—**Bedford.**—COAL BUNKERS, &C.—Tenders are invited by the Corporation for the erection of buildings and reinforced concrete coal bunkers. Specifications from the Engineer, Electricity Works, Cauldwell-road, Bedford. Deposit £1.

NO DATE.—**Spennymoor.**—REPAIRS.—Tenders are invited for repairs to houses at Riseburn, Middridge. Particulars from Mr. J. R. Barker, Tudhoe Iron Works, Spennymoor.

FURNITURE, MATERIALS, etc.

OCTOBER 24.—**London.**—PIPES AND FITTINGS.—The Commissioners of H.M. Works invite tenders for cold water pipes and accessories for six months, and for steam fittings. Forms of tender of the Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W. 1.

ENGINEERING, IRON AND STEEL.

NO DATE.—**Lemington.**—DRIFT.—Tenders are invited for the following work at the Walbottle Percy Colliery, Lemington: Level stone drift, 6 ft. high × 6 ft. wide, length 80 yds.; coal and stone drift (level), same size as above. Particulars at the colliery.

Public Appointments.

✱**Sheffield.**—The City Architect of Sheffield requires qualified assistants. Temporary staff engagement. Apply, stating terms, to City Architect, Town Hall, Sheffield.

Auction Sale.

✱OCTOBER.—**London.**—Messrs. J. T. Skelding & Co. will sell at the Depot, 15, Pennard-road, W., the Builder's and Contractors' plant and machinery of Messrs. Leslie & Co., Ltd., Shepherds Bush. Catalogues now preparing. Auction Offices, 43, Gresham-street, Guildhall, E.C. 2.

TRADE NEWS.

ONE of the best devices for the economising of fuel which has been brought to our notice is the "British Bulldog" bright-burning, self-adjusting fire, for which the proprietors, Messrs.

Nicholls & Clarke, Ltd., of High-street, Shoreditch, claim that it can be adjusted to any ordinary existing grate by anyone in a few minutes, and that it will show a saving in fuel consumption of from 40 per cent. to 50 per cent. as compared with the usual fire-grate fitted with bars. Our illustration shows the "British Bulldog" fire in an ordinary register stove from which the front bars are removed. This fire is equally suitable for burning coal or wood-logs, it has a neat appearance, and, as the cost is small, it is quickly covered by the fuel saving in a short time.

THE TOWN PLANNING INSTITUTE.

THE first general meeting of the Town Planning Institute was held on October 4, at No. 92, Victoria-street, S.W., by permission of the Institution of Municipal and County Engineers. Professor S. D. Adshead, F.R.I.B.A.(President), took the chair.

Professor Adshead, in the course of his presidential address, said that in view of the epoch-making hopes and anticipations that the immediate future held forth, he felt he could not do better than direct their attention to some of the immediate issues in reconstruction which related to the problem of town planning. It was a matter of congratulation to all to know that a regeneration of housing conditions was to-day acknowledged by all parties and on every hand to be the most important of the many questions that related to social and national reform. It had always been his opinion that the cost of food, and wages, and the price of the bare necessities of life would ultimately adjust themselves to the value of labour and material that would have to be expended on the erection of a working man's house, and that as a basis of reconstruction it must be within the competency of every working man to live in a house, which, in regard to its surroundings, accommodation and appearance, could admittedly be described as a home.

Housing and Town Planning.

He considered that the Local Government Board, who were responsible for the housing conditions of the working classes throughout the country, had put forward a scheme for meeting the difficulty which was reasonable, practical and progressive, in so far as it was likely to meet with general acceptance and be adopted. If in the eyes of the Institute it had shortcomings, they were concerned with the town-planning issues that were involved; they were particularly interested in seeing that housing schemes fitted in with the requirements of the comprehensive town plan, and there was some danger that in certain cases houses would be wrongly placed. In the past a good deal of consideration had been given to the question of how town planning by Act of Parliament could be remedied so as to put some impetus into schemes. A great deal of the delay was no doubt due to the conditions of the times, but he was inclined to think that the delay must generally be ascribed to the unimaginative outlook of the average local authority, to their fear of incurring expense in regard to matters that appeared to them somewhat hazy, and to a real ignorance of what town planning entailed and meant.

There was a crying need for a better and amended Town Planning Act, and in view of the changed conditions of the times and the general attitude of the public towards disciplinary legislation, he was not at all disinclined to think that some measure of compulsion might not be a bad thing. Perhaps there might be set a period of ten years, by the end of which period every local authority should have its town plan. Any such form of compulsion should carry with it an offer to be relieved of much of the responsibility by the central authority, and that compulsion should only have reference to a limitation in time. To his mind, in view of the universal ignorance on the subject that prevailed, such a limit ought not to be a day less than ten years and it might be fifteen; but it was an incontrovertible truth that every inch of undeveloped England ought to be planned. What he took the strongest objection to was the adoption of that form of compulsion which, in order to evade any exercise of the imagination, lengthy discussion, persuasion with owners and all the difficulties of negotiation upon which a really good town plan must necessarily depend, would practically convert town planning into the compulsory adoption of a few new by-laws with reference to undeveloped land. Unless housing schemes formed parts of town-planning schemes mistakes would certainly be made, and as a corollary it was just as true that the town plan should dovetail with the district development plan. He thought the Government should move in the matter of a development plan for the whole of England, but it was perfectly obvious that, before this could be regarded as a responsible undertaking, the question of administrative areas would have to be decided upon. There was no reason, however, why a scheme, possibly in the irresponsible form of a report, should not at once be prepared. So far as available evidence disclosed the attitude of the Government, the question of scientifically erecting the 300,000 houses it was proposed to build was being seriously evaded. He understood that the Garden Cities Association was considering the question of founding new garden cities in suitable areas, and he hoped the Government would not confine its efforts to encourage house building only by local authorities. Solid encouragement would surely be given to those genuine public utility societies who up to now had certainly led the way.

The Problem of Reconstruction.

For the purpose of finding out in what way the great problem of reconstruction was being considered in its relation to the making of a national development plan, and in what way the reports of the numerous committees that were at work were related to one another, he had studied and scrutinized the references and, in cases where they were available, the reports themselves of some eighty-seven Government-appointed commissions and committees that had been considering the question of reconstruction. From their point of view, it was regrettable that none of these committees was concerned with such important problems as regional planning, or the distribution, relation and structural development of towns. There were, of course, the four committees that had been set up by the Local Government Board whose reference was "Housing," and in a secondary way, they, no doubt, touched the question of town planning, as, indeed, did other committees, such, for instance, as those concerned in the improvement of the village, trade development, and power distribution. But all these seemed to him to want dovetailing together by means of a development plan.

Proceeding to deal with the various committees, the President touched on the report of the Agricultural Policy Sub-Committee, and said that of the different heads under which this somewhat lengthy report is arranged, those relating to general policy, and, in particular, those relating to village reconstruction, small holdings, transport, reclamation, and deer forests were of interest to them, and if embodied in Acts of Parliament would profoundly affect regional planning. They all welcomed any proposals that might emanate from the Government for the improvement of agricultural England, and for his own part he thought that in the main the general trend of the proposals was sound. As to whether the recommendations of the report would ever be embodied in Acts of Parliament remained to be seen; but, if so, village planning as a specialised undertaking must have more recognition. Another report, that of the Coal Conservation Committee, contained matters of the greatest interest to them. It showed by a map where the proved concealed coalfields lie, and also all those areas where possible new coalfields and extensions exist. In the preparation of a regional survey, recognition of the potential value of these areas would be of the greatest importance, more especially in such places as Kent, where proved concealed coalfields lie. It was not too soon to commence preparing schemes for development on a regional basis here. Sites for mining villages, power stations, factories, and lines of communication by road and rail ought at once to be plotted. Planned with due consideration to cleanliness, hygiene, economy, and all the advantages that were offered by the application of modern science, and to a well-thought-out regional plan, there was no reason why industrial Kent, even though it might lose some of its cobnuts, hops and even hedgerows, should not still be a county of model villages, chalk cliffs, marshes, and hazel woods very much as to-day. He felt it was the responsible duty of this Institute to watch the mining developments of Kent.

Super-stations for Electricity.

There was also the recommendation for the creation of sixteen super-stations for the generation of electricity, which should, to a great extent, supersede the existing small undertakings, and it might be asked in what way this would affect town planning. In the first place, centres or sites suitable for electric generating purposes were to be chosen on important waterways, as the future main centres of supply for each of the districts into which the country was to be divided, and it was pointed out that the sites so chosen should be as large as possible, having in view the land available in suitable localities, and should have ample water and transport facilities. Land was required not only for the power stations themselves, but for processes involved in the extraction of by-products; it was also required for the development of electro-chemical processes which might most conveniently be carried on in close proximity to the power plant. Further, the country was to be traversed by a network of trunk mains or electrical roads, and he thought that everyone would agree that the routes of these trunk systems ought to be considered in connection with the making of any new and important thoroughfares. Here, then, they had a proposal for erecting what practically meant a number of quite new super-industrial towns. If the recommendations should ever find their way into their legislation, which he hoped and trusted they would, the project was of enormous importance to them, if only from the point of view of town planning.

Work for Labour after the War.

Consideration was next given by the President to the proposals of the Ministry of Reconstruction for commencing works of interest to the town planner immediately after the war; and in reference to the question of finding work for labour at present engaged on munition works, he said if a few great works of national importance, arranged in connection with available materials, could be prepared, they would act as reservoirs for labour from which labour for later matured schemes could gradually be drawn. In the case of unskilled labour a most suitable reservoir would be a few big schemes for constructing the foundations of new roads. The preparation of schemes for the construction of new main roads with the necessary arrangements, financial and administrative, for their execution seemed to him to be a work of first importance. They were also concerned with the case of the disabled soldier, and if he was to be settled in colonies and villages, here was further work for the town planner.

In conclusion the President pointed out that the strength of the Institute and its ability to promote the objects for which it was founded would depend very much upon the expansion, cohesion and enthusiasm of its membership. He hoped it would be able to arrange a meeting at Birmingham, Manchester, or Liverpool during the session. The time would soon be arriving when the door would be closed to membership, except through examination, and therefore he hoped that all who could reasonably claim acceptance as members would now come in. It had been a happy circumstance that members of so diverse ability and attainment as the Institute was composed of—lawyers, architects and surveyors—should have in town planning discovered that there existed between them that feeling of, should he say, liberty, unity, and fraternity which, under normal circumstances, it was somewhat rare to see. He hoped and trusted it would continue, so that they might concentrate on this great work of town planning which none of them could undertake alone.

Mr. H. V. Lanchester, F.R.I.B.A., proposed a vote of thanks to the President, which was seconded by Mr. E. Willis (Chiswick) and heartily agreed to.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.	£ s. d.
Best Stocks	3 3 6

Per 1000, Delivered at London Goods Stations.	£ s. d.		£ s. d.
Flettons	2 7 6	Best Blue Pressed Staffordshire	7 18 6
Best Stourbridge Fire bricks	9 5 0	Do. Bullnose	8 3 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	17 17 6	D'ble Str'tch'rs	23 7 6
		D'ble Headers	20 7 6
		One Side and two Ends	24 7 6
Headers	17 7 6	Two Sides and one End	25 7 6
Quoins, Bullnose and 4½in. Flats	21 7 6	Splays and Squints	22 17 6

Second Quality, £1 per 1,000 less than best.
Glazed bricks priced at so much each, 50 per cent. advance on list.
Permission to be obtained from Director of Supplies for Flettons, Wire Cuts, &c.

	£ s. d.	
Thames Ballast	17 0	per yard, delivered
Pit Sand	16 0	
Thames Sand	17 0	,, ,, 2 miles
Best Washed Sand	17 0	,, ,, radius
¾ in. Shingle for Ferro-Concrete	15 0	,, ,, Paddington.

Per ton, delivered.	£ s. d.		£ s. d.
Best Portland Cement	3 3 0	..	3 6 0

Do. £2 16s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 2 2 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½

White basebed, 2d. per ft. cube extra.
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.	s. d.		s. d.
Ancaster in blocks	2 10	Closeburn Red	
Bere in blocks	1 9	Freestone	3 0
Grinshill in blocks	2 6	Red & White Mansfield random block	4 8
Darley Dale in blocks	2 10	Yellow Magnesian Limestone do. do	3 9

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.	
Scappled random blocks	Per Ft. Cube	5 8
6 in. sawn two sides landings to sizes (under 30 ft. super.)	Per Ft. Super	4 6
6 in. rubbed two sides, ditto	,,	4 11
3 in. sawn two sides slabs (random sizes)	,,	1 11
2 in. to 2½ in. sawn one side slabs (random sizes)	,,	1 3
1½ in. to 2 in. ditto, ditto	,,	1 1

HARD YORK—

Delivered at any Goods Station London.		
Scappled random blocks	Per Ft. Cube	4 9
6 in. sawn two sides landing to sizes (under 40 ft. super.)	Per Ft. Super	4 0
6 in. rubbed two sides ditto	,,	5 0
in. sawn two sides slabs (random sizes)	,,	1 11
2 in. self-faced random flags	Per Yard Super	6 0

WOOD.

TIMBER CONTROL ORDER, 1918.

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD

	1st £	2nd £	3rd £	4th £		1st £	2nd £	3rd £	4th £
4 × 11	59	57	55	53	2 × 9	53	51	49	47
4 × 9	56	54	52	50	2 × 8	52	50	48	46
4 × 8	53	51	49	47	2 × 7	52	50	48	46
4 × 7	53	51	49	47	3 × 6				
2½ & 3 × 11	58	56	54	51	2½ × 6	unsorted			47
2½ & 3 × 9	53	51	49	47	3 × 5	unsorted			46
3 × 8	52	50	48	46	2½ × 5	unsorted			46
3 × 7	52	50	48	46	2 × 6	unsorted			47
2½ & 7/8	52	50	48	46	2 × 5	unsorted			45
2 × 11	58	56	54	51	2 × 4	unsorted			45

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.
Boards, 1st and 2nd, £2 10s. extra.
Boards, 3rd and 4th, £1 10s. extra.

WHITE SEA WHITEWOOD.

	1st. £	2nd. £	3rd. £		1st. £	2nd. £	3rd. £
3 × 11	57	55	50	3 × 8 u/s	48		
3 × 10	54	52	49	3 × 7 u/s	48		
3 × 9	52	50	48	2½ & 2 × 8 u/s	48		

	£ s. d.		£ s. d.
2½ & 2 × 7 u/s	48 0 0	2½ × 5 u/s	46 0 0
3 × 6½ u/s	47 10 0	3 × 5 u/s	46 0 0
2 × 6½ u/s	47 10 0	2 × 5 u/s	45 0 0
2½ & 3 × 6 u/s	47 0 0	2 × 4 u/s	45 0 0
2 × 6 u/s	47 0 0		

Boards, £1 10s. extra per std.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £50 per std.
SAWN LATHS, 3s. 9d. per bundle.
U/S SLATING BATTENS (yellow and white and stripe), £44.
5th ditto, £42.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.

U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1¼in. P.E. at 71/6	¼in. P.E. at 37/-
1½in. P.E. at 60/-	⅜in. P.E. at 31/-
1in. P.E. at 47/-	½in. P.E. at 23/-
¾in. P.E. at 41/-	

If tongued and grooved or tongued and grooved and matched, 9d. per square extra.

1in. × 11in. P.E at £54	1in. × 9in. P.E. at £51
1in. × 10in. P.E. at £53	1in. × 8in. P.E. at £49

CANADIAN AND AMERICAN YELLOW PINE

	1st £	2nd £	3rd £		1st £	2nd £	3rd £
3 × 12 and up	80	69	67	3 × 8	62	55	53
3 × 11	78	63	61	3 × 7	60	53	51
3 × 10	66	58	56	3 × 4/6	58	51	49
3 × 9	64	56	54				

For complete specification and controlled prices, see issue of September 6, page 148.

Dry Wainscot Oak, per ft. super, as inch	0	3	0	..		—	
¾ in. do. do.	0	2	3	..		—	
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	3	0	..	0	4	0
Cuba, Mahogany	0	3	0	..	0	4	0
Teak (Rangoon, Moulmein or Java), per load	70	0	0	..	85	0	0
American Whitewood planks, per ft. cube	1	8	0	..	1	10	0
Glue, per cwt.	12	0	0	to	13	0	0

SLATES.

Per 1,000 of 1,200 f.o.r. London.	£ s. d.	
Best Blue Bangor Slates,	20 by 10	21 0 0
,, ,,	16 by 8	10 0 0
First quality ,,	20 by 10	20 0 0
,, ,,	16 by 8	10 5 0
Best Blue Portmadoc	20 by 10	20 0 0
,, ,,	16 by 8	10 0 0
First quality ,,	20 by 10	19 10 0
,, ,,	16 by 8	9 15 0

TILES.

Per 1,000 f.o.r. London.	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	4 15 0
Ditto hand-made ditto	5 0 0
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen)	0 9 0

METALS.

JOISTS, GIRDERS, ANGLES, C.I. COLUMNS, &c.

(Prices controlled by Ministry of Munitions.)

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.		Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	31½	35	....	36½	37½
Water	26½	32½	....	31½	35
Steam	21½	30	....	26½	32½
Galvanised Gas	8½	27½	....	12½	30
,, Water	—	25	....	3½	27½
,, Steam	6½ *on*	22½	....	2½ *on*	25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles s. d.	
2 in. per yd. in 6 fts.	4	2	3	1	3	8
2½ in. ,,	4	9	3	5	4	7
3 in. ,,	5	10	3	8	5	6
3½ in. ,,	6	6	4	7	6	6
4 in. ,,	7	1	5	2	7	3

RAIN-WATER PIPES, &c.

	Pipe. s. d.		Bends, stock angles. s. d.		Branches, stock angles s. d.	
2 in. per yd. in 6fts. plain	2	9½	1	8½	2	4½
2½ in. ,, ,,	3	1	1	11½	2	9½
3 in. ,, ,,	3	8	2	6½	3	8
3½ in. ,, ,,	4	5	3	0	4	3½
4 in. ,, ,,	4	10	3	6	5	3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 7s. 7d. .. 5 in., 9s. 2d. .. 6 in., 10s. 9d.

Per ton in London.	£ s. d.		£ s. d.
IRON—			
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars—good merchant quality	17 0 0	..	17 10 0
Staffordshire "Marked Bars"	18 0 0	..	19 0 0
Mild Steel Bars	21 0 0	..	21 10 0
Steel Bars, Ferro-Concrete quality, basis price	19 10 0	..	20 0 0
Hoop Iron, basis price	20 10 0	..	21 10 0
,, ,, Galvanised	33 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g.	23 0 0	..	23 10 0
,, ,, 24 g.	24 0 0	..	24 10 0
,, ,, 26 g.	25 0 0	..	26 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0

METALS (*Continued*).

Per ton in London.	£ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	—
,, ,, 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	Nominal prices only.
Ordinary sizes, 26 g.	32 10 0	..	Nominal prices only.
Best Soft Steel Sheets, 6 ft. by 2 ft. to 8 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	40 0 0	..	—
Pipe in coils	40 10 0	..	—
Soil Pipe	43 10 0	..	—
Compo pipe	44 10 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

COPPER—			
Strong Sheet	per lb.	0 2 3	Class A certificate required for all Copper, Tin and Solder purchases.
Thin ,,	,,	0 2 4	
Copper nails	,,	0 2 3	
Copper wire	,,	0 2 4	
TIN—English Ingots	,,	0 3 9	
SOLDER—Plumbers'	,,	0 1 10	
Tinmen's	,,	0 2 4	
Blowpipe	,,	0 2 8	

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.			Per Ft.
15 oz. fourths	7d.	32 oz. fourths	10d.
,, thirds	7½d.	,, thirds	11d.
21 ,, fourths	8d.	Fluted, Obscured and Enamelled Sheet,	
,, thirds	8½d.		
26 ,, fourths	9d.	15 oz.	7½d.
,, thirds	9½d.	21 ,,	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Per Ft.	
¼ Rolled plate	5½d.
¼ Rough rolled and rough cast plate	6d.
½ Rough rolled and rough cast plate	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	6d.
White Rolled Cathedral	6d.
Tinted do.	6½d.

PAINTS, &c.

	£ s. d.		
Raw Linseed Oil	in pipes per gallon	0 8 0	
,, ,, ,,	in barrels ,,	0 8 4	
,, ,, ,,	in drums ,,	0 8 7	
Boiled ,, ,,	in barrels ,,	0 8 7	
,, ,, ,,	in drums ,,	0 9 0	

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1

Turpentine in barrels	,,	0 11 0
,, in drums	,,	0 11 3
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		60 10 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	82 10 0
Red Lead, Dry (packages extra)	per ton	47 0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	1 6 0
Filocol	per cwt.	1 0 6

VARNISHES, &c.

Per gallon.	£ s. d.
Fine Pale Oak	0 16 0
Pale Copal Oak	0 17 0
Superfine Pale Elastic Oak	0 19 0
Fine Extra Hard Church Oak	0 18 0
Superfine Hard-drying Oak, for seats of Churches	1 1 0
Superfine Pale Elastic Carriage	1 1 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 5 0
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 16 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 12 0
Brunswick Black	0 10 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	1 0 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

NEW COMPANIES.

THE particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery Lane, W.C. 2, from the documents available at the Companies Registry :—

C. H. ALLENBY & CO., LTD. (151,494.) Registered September 23, 1918. To carry on the manufacture of belts, nuts, drums, &c., and the business of general engineers. Nominal capital, £1,000.

BEAUX ARTS, LTD., 84, Ebury-street, S.W. (151,471.) Registered September 19, 1918. To carry on the business of holders of exhibitions and dealers in pictures, and makers of picture frames, artists, colourmen, &c. Nominal capital, £2,000.

OLIVER V. BECKERLEGE, LTD., 102, Button-lane, Sheffield. (151,435.) Registered September 16, 1918. To carry on the business of general mechanical and electrical engineers, hammer and tool makers, and ironfounders and steel makers, &c. Nominal capital, £1,500.

TEES IRON AND HARDWARE, LTD. (151,595.) Registered October 4, 1918. To acquire and carry on the business of iron and steel merchants, ironmongers and hardware dealers and factors, engineers, shipbuilders and builders' merchants, &c. Nominal capital, £15,000.

The M. P. MANUFACTURING CO., LTD. (151,551.) Twyford Hall, Twyford-street, Caledonian-road, N. Registered September 29, 1918. To carry on business as electrical, gas, and mechanical engineers, and manufacturers of batteries. Nominal capital, £1,000.

WILLIAM NOCK, LTD. (151,500.) Registered September 2, 1918. To take over and carry on the business of brickmaker at Holy-lane Brick-works, Erdington, Birmingham. Nominal capital, £6,000.

THE PARK TOOL AND ENGINEERING CO., LTD. (151,574.) 39, Camp-road, Leeds. Registered October 2, 1918. To acquire and carry on the business of engineers, tool makers, iron founders, mechanical engineers, and manufacturers, &c. Nominal capital, £3,000.

THE PROTECTOR CO., LTD. (151,497.) Registered September 23, 1918. To carry on the business of mechanical, technical and general engineers and consultants. Nominal capital, £2,000.

GEO. RANDLE & SON, LTD. (151,546.) The Steam Saw Mills, The Docks, Bridgewater, Somerset. Registered September 28, 1918. To carry on the business of timber merchants, contractors, sawyers, &c. Nominal capital, £10,000.

RICHMOND MECHANICAL WORKS, LTD. (131,427.) Registered September 14, 1918. To carry on the business of engineers, manufacturers' contractors, builders' merchants, agents, and dealers in all kinds of machinery. Nominal capital, £6,000.

CITY UNITED ESTATES, LTD. (151,487.) Registered September 21, 1918. To acquire lands, houses, buildings, &c., by purchase or exchange, and to sell or let such lands or tenements. Nominal capital, £25,000.

PATENTS.

APPLICATIONS PUBLISHED.*

118,433.—F. C. Bargar: Fire extinguishers.
118,442.—P. N. Nissen: Portable buildings.
118,443.—J. J. Bywater: Pipe or rod cutters.
118,479.—E. O. Williams: Construction of reinforced concrete floors, decks, such as decks of ships, deck floors, for bridges and the like.
118,490.—D. Smith: Windows of houses and the like.
118,525.—H. Pickup: Fire-grates.
118,541.—E. J. Bartells: Paving blocks.
115,803.—J. S. Surbaugh: Shovels, scoops, spades and like implements.

Visit of Greek Delegates to Carron Works.

The Greek Delegates, who are visiting business and industrial centres in this country under the auspices of the Federation of British Industries, visited Carron Works on the 9th inst. Arriving at Larbert Station, the party were conveyed in motor-cars to the Dobbie Hall, where they were entertained to lunch by the Carron Company under the chairmanship of the Company's manager, Mr. Geo. Pate, supported by Bailie King, chairman of the National Light Castings Association, Mr. Robert McFarlan, C.A. (of Messrs. Kerr, Andersons & MacLeod), the organiser for Scotland of the Federation of British Industries, and by Mr. G. E. R. Young, assistant organiser. After lunch the party proceeded to Carron Works and were conducted through the various departments of the Low and Mungal Foundry by Mr. Pate and a few of the Company's officials. Tea was served in the Company's canteen at Mungal Foundry, after which the party drove to Larbert Station to catch the train for Glasgow, where they were to be entertained to dinner by the Lord Provost and Corporation of that city. Despite the inclemency of the weather, the party seemed to thoroughly enjoy their visit.

* All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 12 noon on Wednesday.*
* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*

CROYDON.—For water-softening plant, for the Corporation :—
*W. Boby £900

SHEFFIELD.—For conversion of premises at Leeder-road, for the Corporation :—
*G. W. Raynor & Son..... £87 15s.

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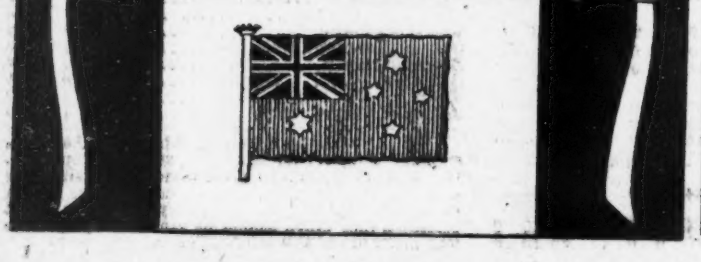

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